Belfast City Council

Future skills needs

Final report

January 2019

Ulster University Economic Policy Centre

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Acronyms and skills classification

Acronyms

Acronym	Full title
UUEPC	Ulster University Economic Policy Centre
BCC	Belfast City Council
BCR	Belfast City Region
NI	Northern Ireland
NQF	National Qualifications Framework
SIC	Standard Industrial Classification
SOC	Standard Occupational Classification
LFS	Labour Force Survey
LADB	Local Area Database
DfE	Department For Economy
LGD's	Local Government Districts
JACS	Joint Academic Coding System
SSA	Sector Subject Area
HE	Higher Education
FE	Further Education
LGD	Local Government District
HND	Higher National Diploma
MCS	Millennium Cohort Study

Skills Classification

1. The skills level used in the analysis will be based on the National Qualification Framework (NQF) which aligns to qualification levels as set out in Table 1.

Table 1: National Qualification Framework (NQF) scale

NQF level	Description
Level 8	PhD (or equivalent)
Level 7	Masters (or equivalent)
Level 6	Degree (or equivalent)
Level 4-5	Foundation Degree/ HND/ HNC (or equivalent)
Level 3	A-Level (or equivalent)
Level 2	5 GCSEs Grades A – C (or equivalent)
Level 1	5 GCSEs Grades D – G (or equivalent)
Level 0	No qualifications

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1. Introduction

1. Ulster University Economic Policy Centre (UUEPC) were commissioned by Belfast City Council (BCC) to report on the future skill needs of the Belfast City Council area. The empirical approach is based directly upon UUEPC's forecasting methodology employed in the Northern Ireland (NI) Skills Barometer[1].

2. The NI Skills Barometer was commissioned by the Department for the Economy (DfE) and involved the development of an economic model to forecast future skills needs and skills gaps by qualification level, subject area and sector. The project was originally commissioned in 2015 and is updated every 18 months. The quantitative findings of the research have benefitted a wide range of stakeholders including; careers advisors, young people and parents; teachers and schools; business groups; DfE and wider Government.

3. This report summarises the key results and messages from the assessment of future skills demand, and review of supply side indicators relating to the BCC area. The report also provides background economic context which underpins the skills forecasts.

4. The remainder of this report is summarised as follows:

- Local economic context;
- Skill requirements for tomorrow's economy – High growth scenario;
- Supply side;
- Can Belfast's residents' service tomorrow's skill needs?;
- Summary and policy remarks;
- Annex A: Skill requirement's for tomorrow's economy – Baseline scenario;
- Annex B: Skills forecasting caveats;
- Annex C: Correlation analysis;
- Annex D: GIS analysis;
- Annex E: District Electoral Areas and electoral wards in BCC; and
- Annex F: District Electoral Area scorecards.

[1] UUEPC (2017) Northern Ireland Skills Barometer, Skills in Demand https://www.economy-ni.gov.uk/publications/ni-skills-barometer

2. Local economic context

Introduction

1. In order to fully understand the future skill needs of the BCC area it is useful to illustrate a number of economic and skill characteristics of the BCC workforce (i.e. **the jobs in Belfast, not the jobs Belfast residents hold**).

2. Where statistics relate to 2017 data is estimated using information from UUEPC's economic model. In all other cases figures relate to the most recently published official data. Although a number of figures in this chapter use data from the 2011 Census, the stock of skills changes very slowly over time. Therefore, the Census is still considered to be a data source which reflects current skills patterns across BCC and NI.

Workforce sector structure (jobs-based, workplace based)

3. The largest sector in Belfast[2] is human health and social work activities, which provides 36,800 jobs. This accounts for 14% of all jobs in BCC. The second largest sector is the administrative and support services sector, which accounts for 32,000 jobs in BCC. This represents 13% of BCC's jobs, and 52% of all jobs in this sector in NI.

4. Other large employers within BCC include wholesale and retail trade (30,400 jobs, 12% of BCC's total); public administration (25,600 jobs, 12% of BCC's total); education (20,900, 8% of BCC's total); and professional services (19,400 jobs, 8% of BCC's total).

Figure 2.1: Structure of workplace jobs in BCC (2017)

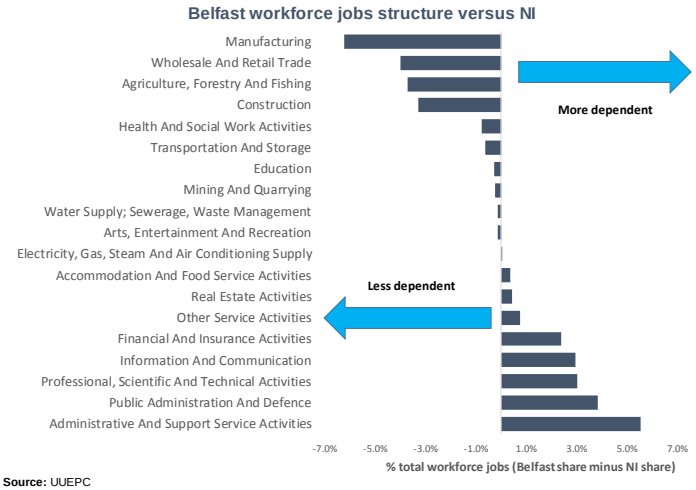
Source: UUEPC

5. Relative to the NI average the BCC economy is more dependent upon administration and support services; public administration; professional services; information and communication; and finance and insurance services. **Several of these sectors are**

[2] For the remainder of this report 'Belfast' refers to the Belfast City Council Local Government District boundary.

highly skill intensive. The information and communication and professional services sectors have a particularly high graduate content.

Figure 2.2: BCC workforce jobs structure versus NI (2017)



Source: UUEPC

Source: UUEPC

6. BCC accounts for a high share of overall NI employment in a number of key sectors including information and communication (64% of NI sector total); finance and insurance (61% of NI sector total); administration and support services (52% of NI sector total); and professional services (49% of NI sector total). Therefore, **BCC is a hub for a number of key sectors which have a relatively high skills intensity and strong growth prospects**.

7. The table below summarises sector employment growth in the BCC area and NI. **Since 2012, 24,800 jobs were created within BCC**. This represents 36% of job growth in NI, and the 2nd fastest rate of job growth amongst NI Local Government Districts (LGD's).

Table 2.1: BCC and NI workforce jobs growth (2017)

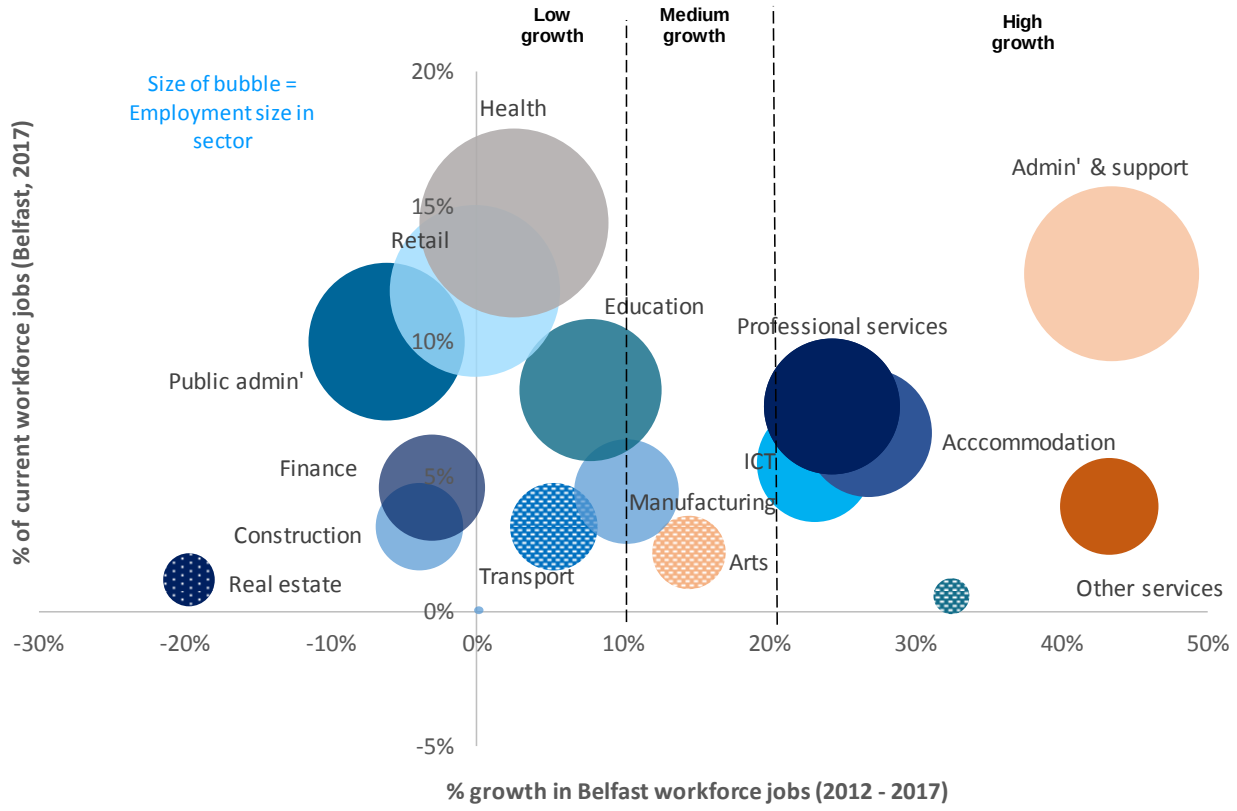
	Belfast		NI
Sector	Job growth 2012-17	% change	NI % change
Agriculture, Forestry And Fishing (including farming employees)	0	0%	-6%
Mining And Quarrying	-54	-70%	-11%
Manufacturing	1,046	10%	20%
Electricity, Gas, Steam And Air Conditioning Supply	414	88%	100%
Water Supply; Sewerage, Waste Management And Remediation Activities	346	33%	14%
Construction	-330	-4%	8%
Wholesale And Retail Trade; Repair Of Motor Vehicles And Motorcycles	-52	0%	1%
Transportation And Storage	400	5%	8%
Accommodation And Food Service Activities	3,582	27%	22%
Information And Communication	2,635	23%	17%
Financial And Insurance Activities	-377	-3%	-6%
Real Estate Activities	-714	-20%	-19%
Professional, Scientific And Technical Activities	3,795	24%	20%
Administrative And Support Service Activities	9,695	43%	33%
Public Administration And Defence; Compulsory Social Security	-1,688	-6%	-9%
Education	1,514	8%	3%
Human Health And Social Work Activities	915	3%	5%
Arts, Entertainment And Recreation	707	14%	14%
Other Service Activities	2,997	43%	45%
Total	**24,830**	**11%**	**9%**

Source:UUEPC

8. Over the past five years employment in BCC has grown by 11%, compared to 9% in NI as a whole. The rate of growth in BCC's other services activities, administration and support services, accommodation and food services and professional services significantly outstripped the growth of BCC employment overall.

9. However, it is also worth highlighting that a number of sectors that are large in scale in BCC have grown slowly, or not at all, over the past five years including health, retail and public administration.

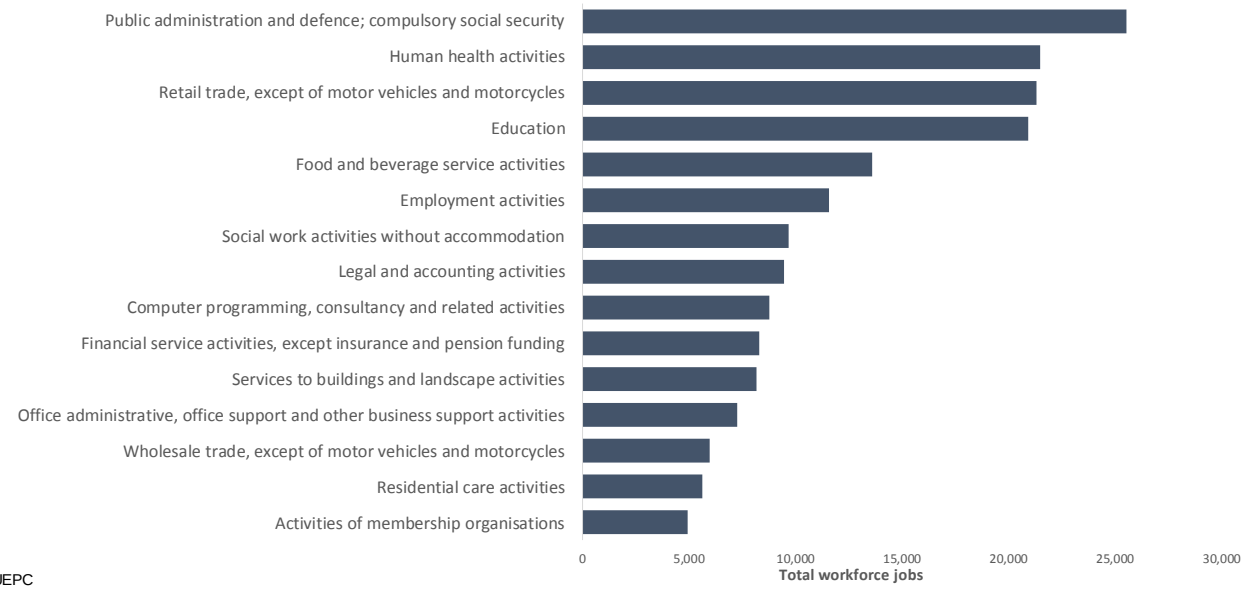
Figure 2.3: BCC sector profile by proportion of workforce jobs (2017) and recent growth performance (2012-17)



Source: UUEPC

10. An analysis of BCC's workforce using two digit Standard Industrial Classification's (SIC) highlights that public administration is the largest sub-sector in NI, accounting for 25,600 jobs. This is followed by health (21,500), retail trade (21,300); and education (20,900).

Figure 2.4: Workforce jobs in BCC - Top 15 sectors by 2 digit SIC (2017)



Source: UUEPC

11. Other large sectors in BCC include food and beverage service activities (13,600); employment activities (11,600); social work (9,700); legal and accounting activities (9,500) and computer programming (8,800).

12. With regard to growth in workforce jobs over the past five years the following sectors have recorded the largest quantum of jobs:

    - **Employment activities:** The sector has contributed the largest quantum of net additional jobs in BCC between 2012-17. This is a 60% increase and has generated an additional 4,300 jobs over the past five years. This sector is primarily comprised of businesses offering recruitment services. Therefore, it is likely that this growth will include temporary workers who are employed by recruitment agencies but in reality work in other sectors.

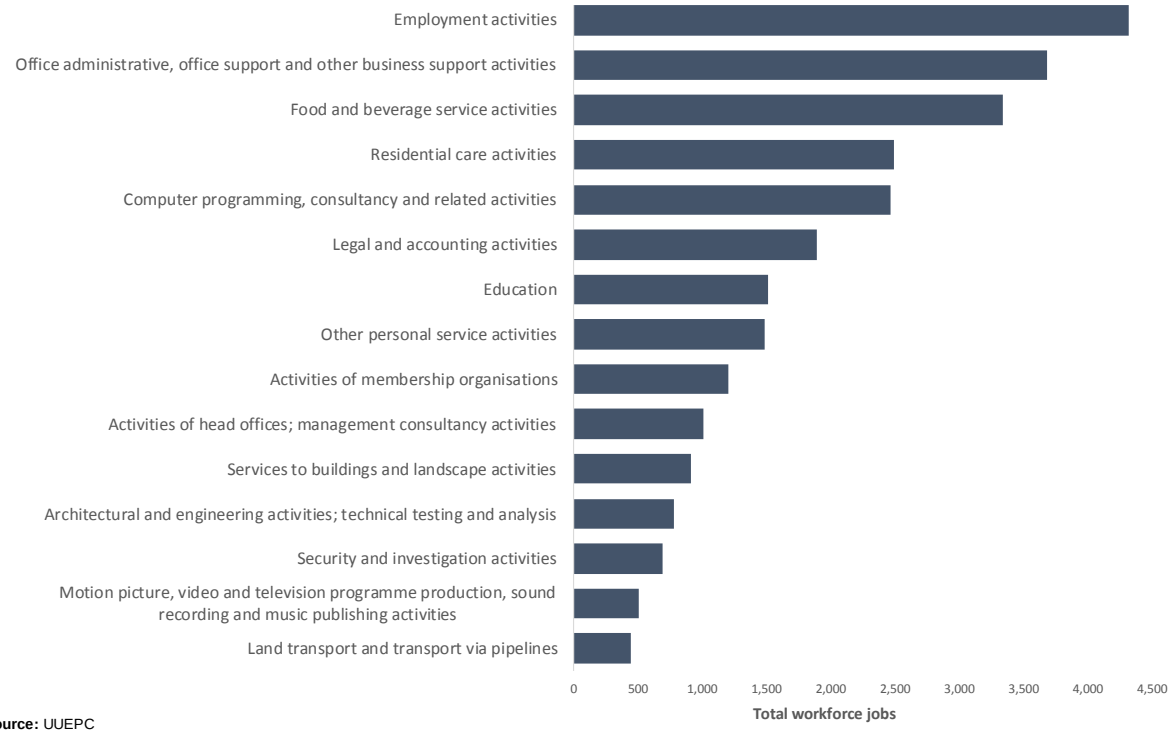
    - **Office administration and support activities:** The number of jobs in the sector has grown by 3,700 between 2012-17, which represents a doubling in the size of the sector within a five year period.

    - **Food and beverage service activities:** Workforce jobs in this sector increased by 3,300 between 2012-17, which represents growth of 32%.

    - **Residential care activities:** Workforce jobs in this sector have increased by 79% over the past five years, contributing an additional 2,500 jobs in BCC.

    - **Computer programming, consultancy and related activities:** This sector created an additional 2,500 jobs between 2012-17, which translates to growth of 39%.

Figure 2.5: Workforce jobs in BCC – Top 15 growth sectors by 2 digit SIC (2012-17)

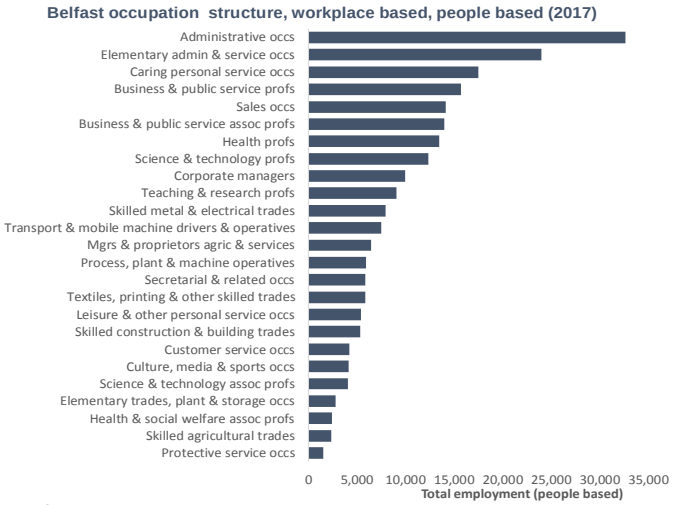


Source: UUEPC

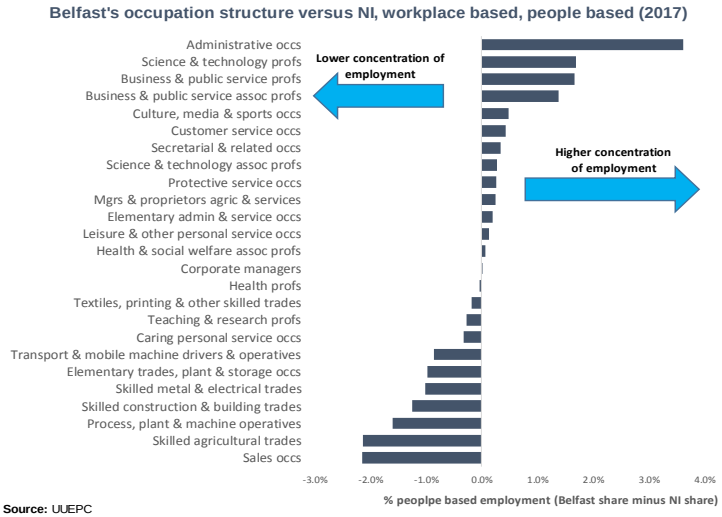
Occupation structure of workplace employment (people-based)

13. The occupation structure of BCC is slightly different to NI as a whole. Administrative occupations are the largest occupation in the BCC workplace, accounting for 14% of total employment. This compares to 10% across NI as a whole.

Figure 2.6: BCC occupation structure versus NI, 2 digit SOC (2017)



Source: UUEPC

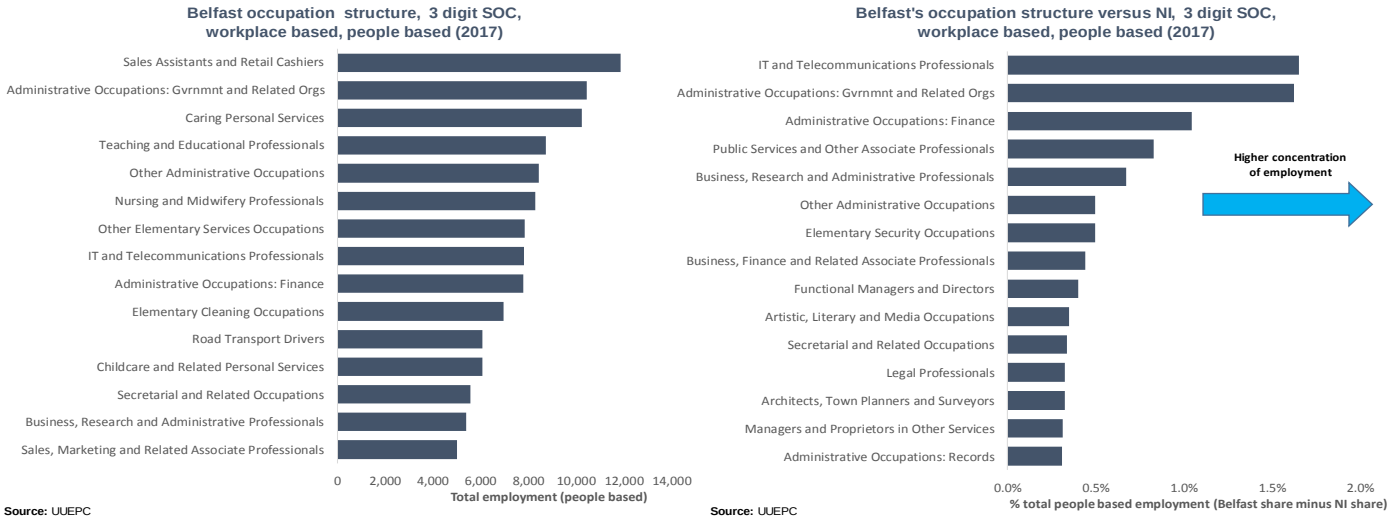


Source: UUEPC

14. BCC is relatively more dependent on occupations such as science and technology professionals; business and public service professionals; and business and public service associate professionals. BCC is relatively less dependent on sales occupations; skilled agricultural trades; and process, plant and machine operatives.

15. Using more granularly defined 3 digit Standard Occupation Classifications (SOC) the top three largest occupations within the BCC workplace are sales assistants and retail cashiers; administrative occupations in government and related organisations and caring personal services.

Figure 2.7: BCC occupation structure versus NI, 3 digit SOC (2017)



16. This occupation structure is considerably different to NI as a whole, with the largest differences being in: IT and telecommunications professionals; administrative occupations in government and related organisations; and administrative occupations in finance. Although the percentage point differences in the chart above may appear small, they do highlight **significant structural differences**. For example, for NI IT and telecommunication professionals to have the same share of employment as BCC would require the number of people working in this sector to almost double.

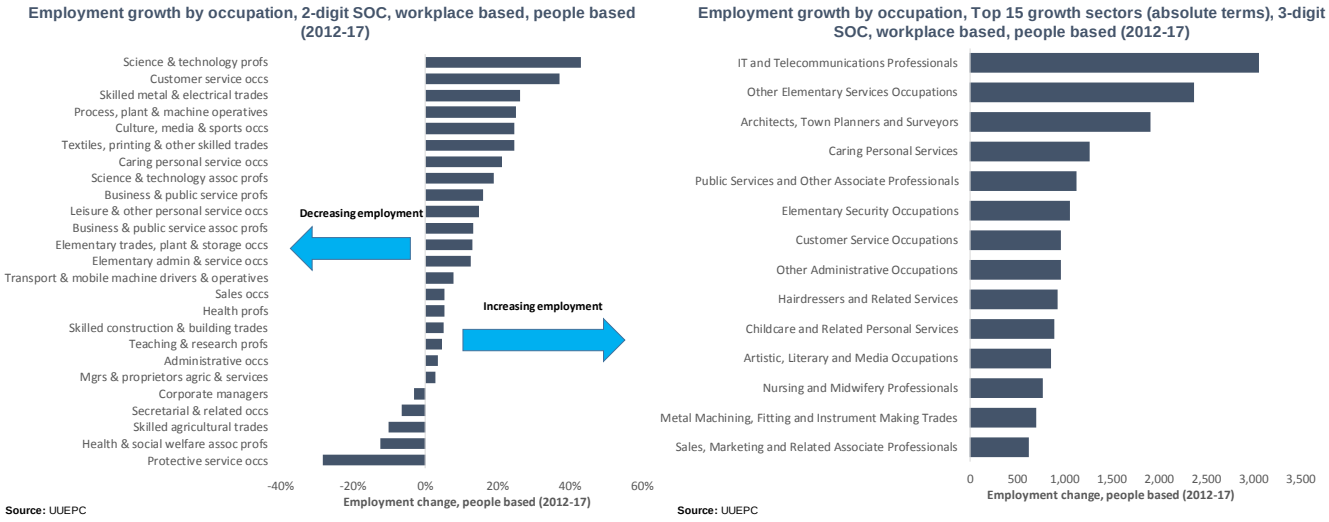
17. At the other end of the spectrum, occupations where BCC has a relatively lower concentration of employment compared to the NI average include agricultural and related trades; sales assistants and retail cashiers; and construction and building trades. Sales assistants and retail cashiers are an interesting case as it is the second largest occupation in BCC, yet it has a much lower share of total employment in BCC relative to the NI average. This is due to the **greater diversity of employment opportunities available in BCC**. Some other areas of NI lack such a variety of employers across multiple sectors. This leads to a staple occupation such as sales assistants and retail cashiers accounting for a higher proportion of total employment in areas outside BCC.

18. **The fastest growing occupation within BCC over the past five years is science and technology professionals**, which has grown by 41%. The two next fastest growing occupations have been culture, media and sport occupations and customer service occupations which both grew by 33% between 2012-17. Although caring personal services ranks as the 8th fastest growing occupation it has contributed the 2nd largest increase in employment in absolute terms.

19. There are a number of occupations which have decreased over the past five years. These are linked either to a change in the occupational composition within sectors or an overall sector trend in sectors where certain occupations are relatively

concentrated. For example, the number of people employed as corporate managers is estimated to have fallen between 2012-17. This is linked to a decline in over employment within the finance sector, where there is a relatively high concentration of corporate managers (e.g. branch managers of banks).

Figure 2.8: BCC employment growth by occupation, SOC (2012-17)



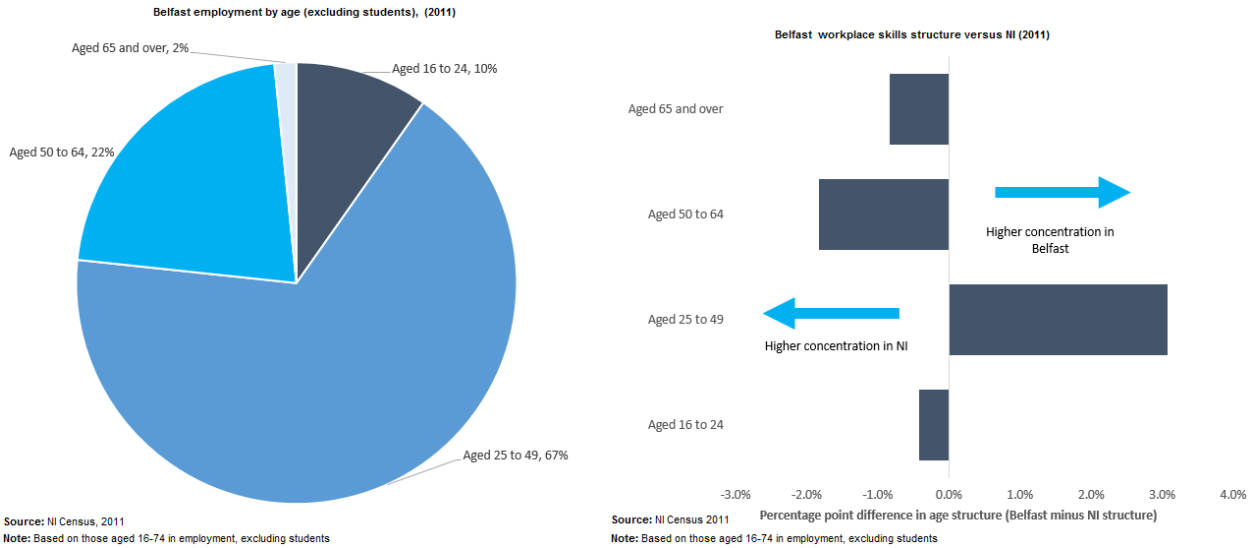
20. Using more granular 3-digit SOC classifications, IT and telecommunications professionals have created the most jobs in absolute terms, accounting for 13% of total employment growth in BCC over the 2012-17 period.

Age structure of workplace employment

21. The age distribution of the BCC workforce is similar to the NI average, and weighted slightly in favour of younger people. Approximately two-thirds (67%) of BCC's workforce are aged 25-49, which compares to 64% for NI as a whole. Around 10% of the BCC workforce is under 25 years of age, which is reflective of higher levels of tertiary level education relative to earlier years. Therefore, younger people stay in education for a longer period, and enter the workforce when they are slightly older.

22. Approximately 23% of persons employed in the BCC workforce are over 50 years old, which is lower than the NI average. This suggests that there will be a **relatively lower demand with regard to replacing retiring workers in the BCC economy compared to NI as a whole**.

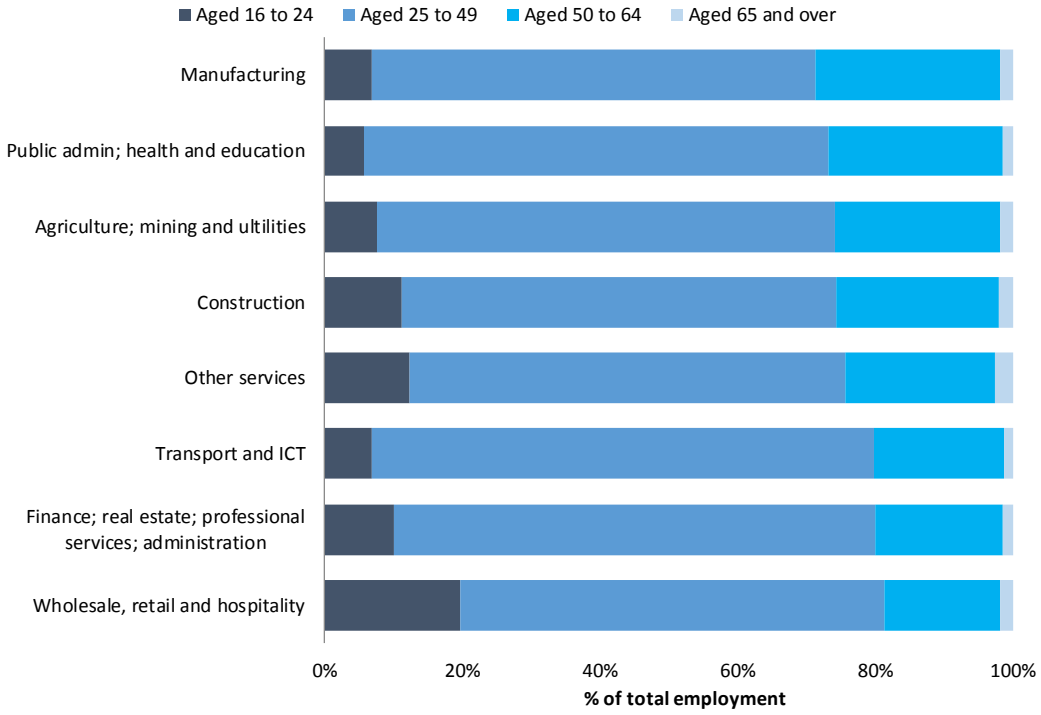
Figure 2.9: Age structure of BCC's workplace employment (2011)



23. At a sector level manufacturing has the oldest workforce with 29% of people employed being over 50. This is followed by public services, where 27% of the people employed in the sector are over 50 years old. Therefore, within the BCC economy there should be a higher level of demand for the replacement of retiring workers within these sectors.

24. In contrast, retail and hospitality has the youngest age profile in BCC, with 19% of people employed being over 50 years old. This suggests a relatively lower skills demand with regard to replacing retiring workers.

Figure 2.10: Age structure of BCC's workplace employment by sector, 1 digit SIC, BCC (2011)



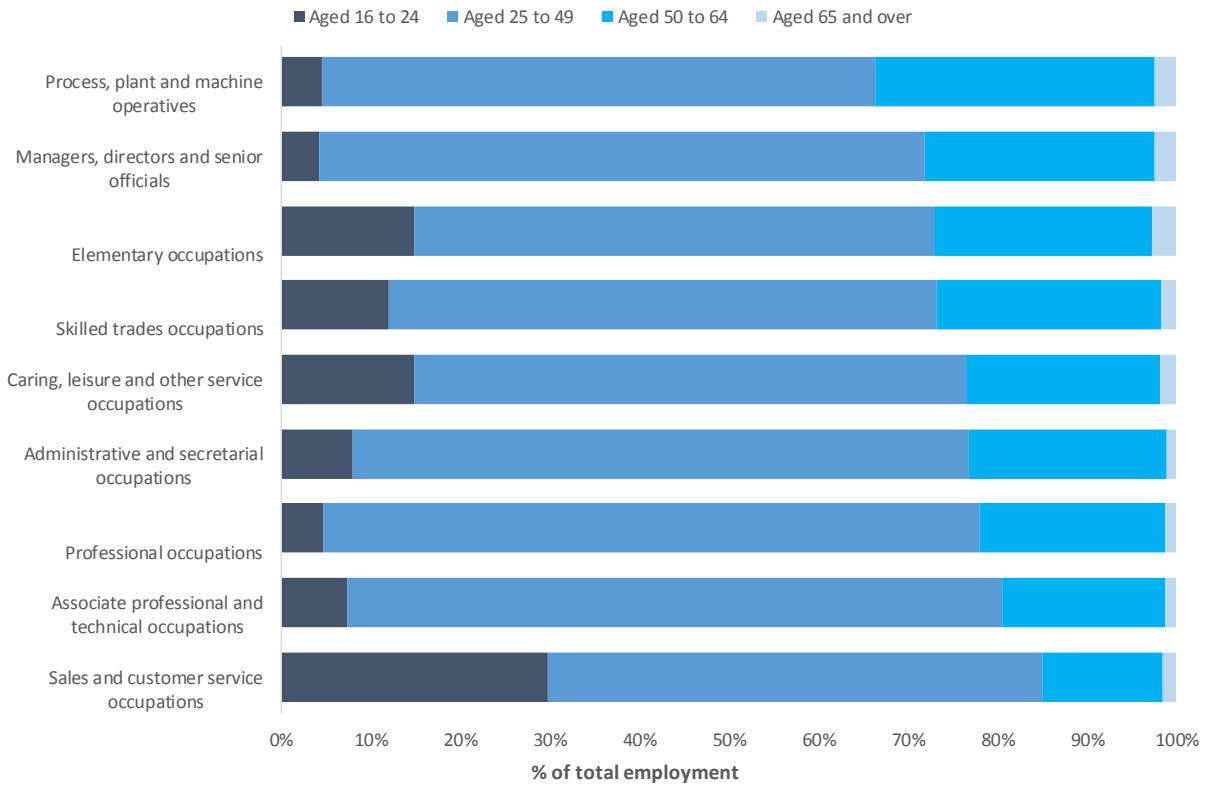
Source: NI Census 2011

Note: Based on those aged 16-74 in employment, excluding students

25. Plant, process and machine operatives have the oldest age profile within BCC workplace employment with 34% being over 50 years old. Managers, directors and senior officials and elementary occupations are also comprised of a relatively large number of mature workers, with 28% and 27% respectively being over 50.

26. Sales and customer services occupations are the youngest occupation, with 30% of those employed being under 25 years old. This is significantly higher than any other sector.

Figure 2.11: Age structure of BCC's workplace employment by occupation, 2 digit SOC (2011)



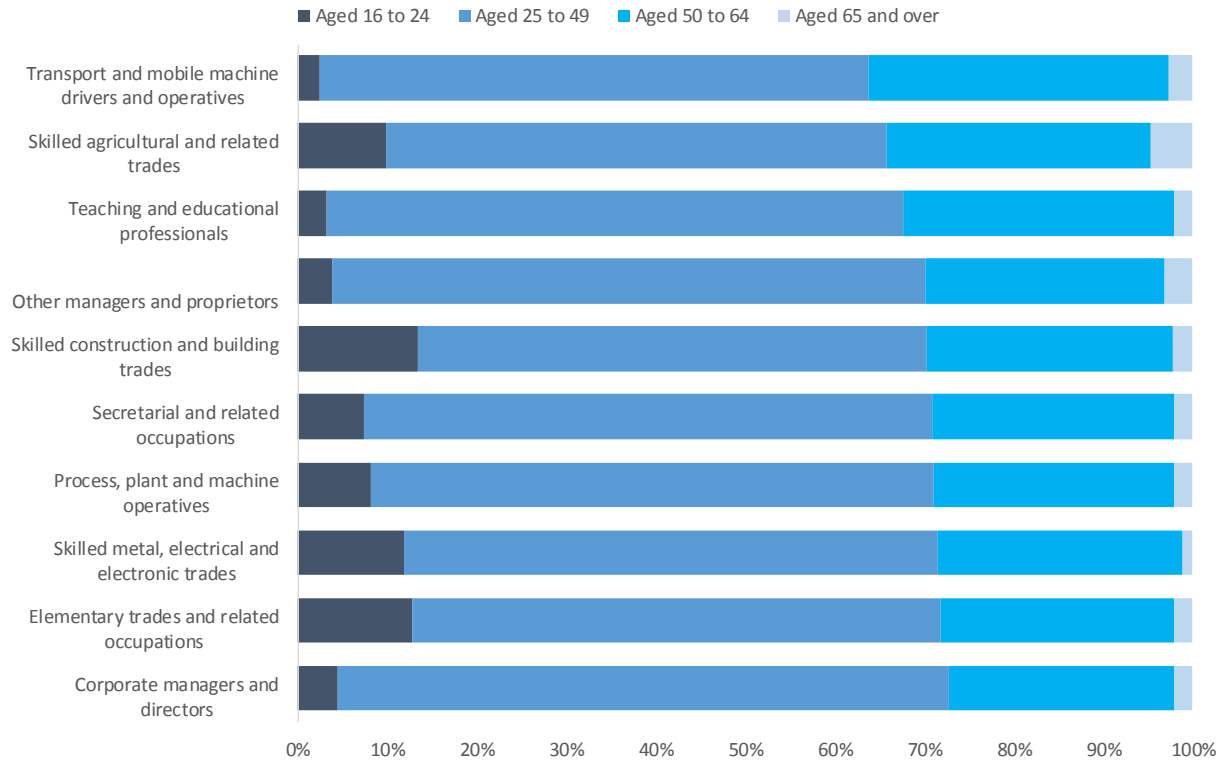
Source: NI Census, 2011
Note: Based on those aged 16-74 in employment, excluding students

27. Sales and customer services occupations are the youngest occupation, with 30% of those employed being under 25 years old. This is significantly higher than any other sector.

28. Looking at more detailed occupation classifications, the occupations with the largest proportion of older people are transport and mobile machine drivers and operatives, where 36% of those employed within BCC are aged over 50.

29. Skilled agricultural trades (34%) and teaching and education professionals (32%) constitute the occupations with the next highest proportion of workers closest to retirement. However, skilled agricultural trades constitute only a tiny proportion of employment (0.3%) within the BCC workplace.

Figure 2.12: Age structure of BCC's workplace employment by occupation, 3 digit SOC, top 10 occupations with workers over 50 (2011)



Source: NI Census, 2011

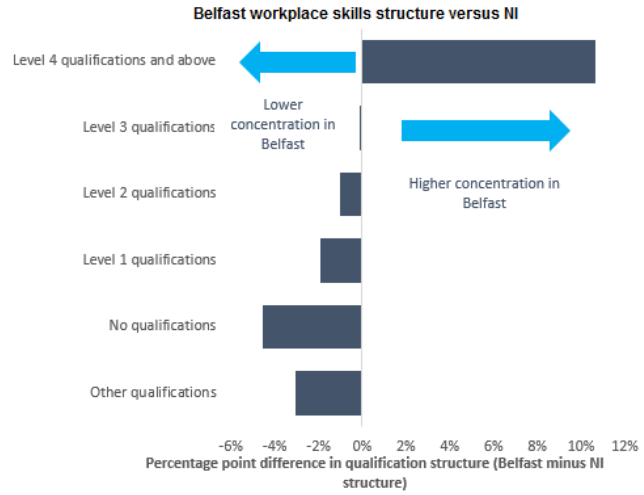
Note: Based on those aged 16-74 in employment, excluding students

Workplace skills structure

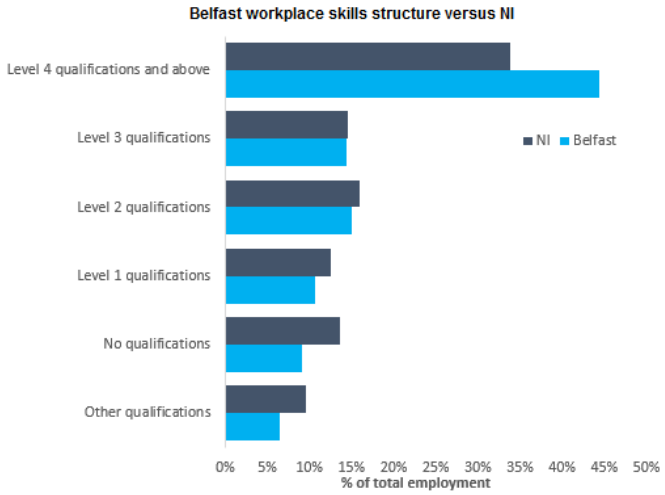
30. **The structure of workplace employment is heavily weighted at the upper end of the skills spectrum**. Over two-fifths (44%) of people employed in BCC have achieved a tertiary level qualification, compared to just over one-third (34%) in NI as a whole. To place this gap of 10 percentage points in context, for NI to match BCC's workplace skills structure would have required 74,000 people within the existing workforce to be upskilled to tertiary level at the time of the 2011 Census.

31. BCC's workplace has a lower proportion of low qualification jobs. A relatively small proportion (26%) of jobs in BCC have a highest level of qualification equal to National Qualification framework (NQF) level 1 or below. This compares to 36% across NI as a whole, a gap of 10 percentage points.

Figure 2.13: BCC workplace skills structure versus NI (2011)



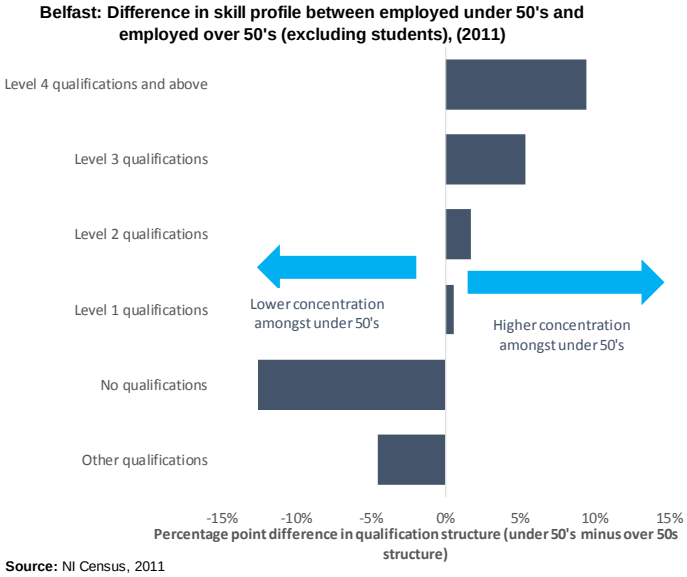
Source: NI Census 2011
Note: Based on those aged 16-74 in employment, excluding students



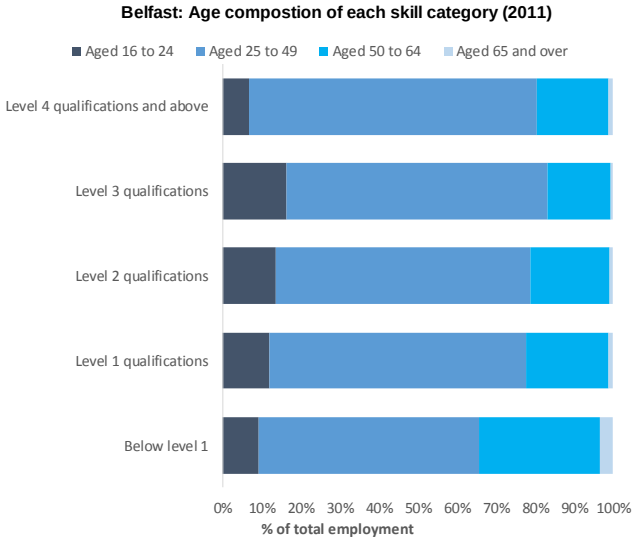
Source: NI Census 2011
Note: Based on those aged 16-74 in employment, excluding students

32. The skills of workers employed within BCC differs significantly by age. **Older workers tend to be associated with lower qualifications** compared to young people, which is reflective of how employer sentiment towards qualifications has changed over time. Of BCC's lowest qualified workers who have a highest level of qualification below NQF level 1 over one-third (34%) are aged over 50.

Figure 2.14: BCC workplace skills structure by age (2011)



Source: NI Census, 2011
Note: Based on those aged 16-74 in employment, excluding students

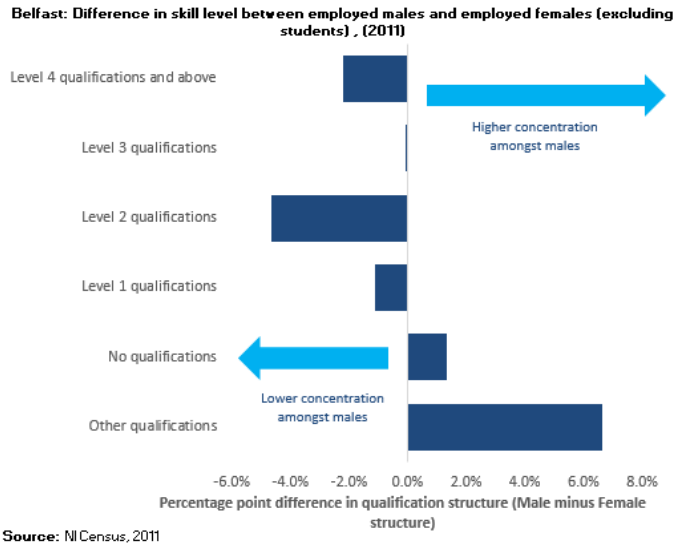


Source: NI Census 2011
Note: Based on those aged 16-74 in employment, excluding students

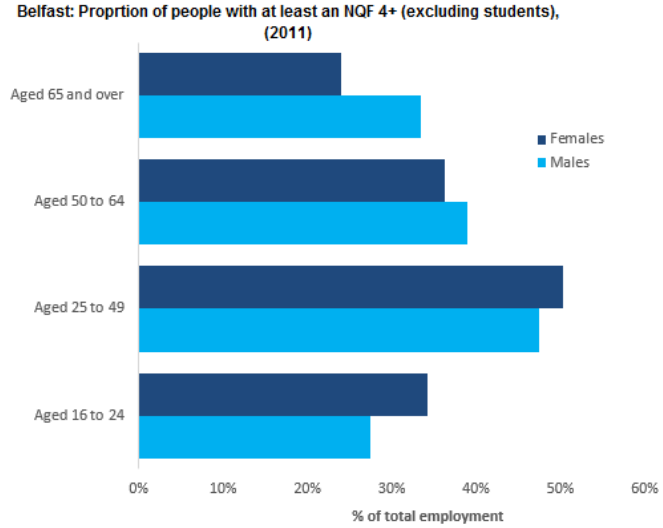
33. The lowest qualified workers are concentrated in older age categories, which suggests that the **workplace skills profile will naturally improve as persons with lower qualifications move from employment into retirement.**

34. The differences in qualification profiles between males and females within the same age category is also striking. Amongst BCC's over 50 workers, males are more likely to be qualified to a tertiary level. However, females are more likely to be qualified to tertiary level amongst the under 50's in employment.

Figure 2.15: BCC workplace skills structure by age and sex (2011)



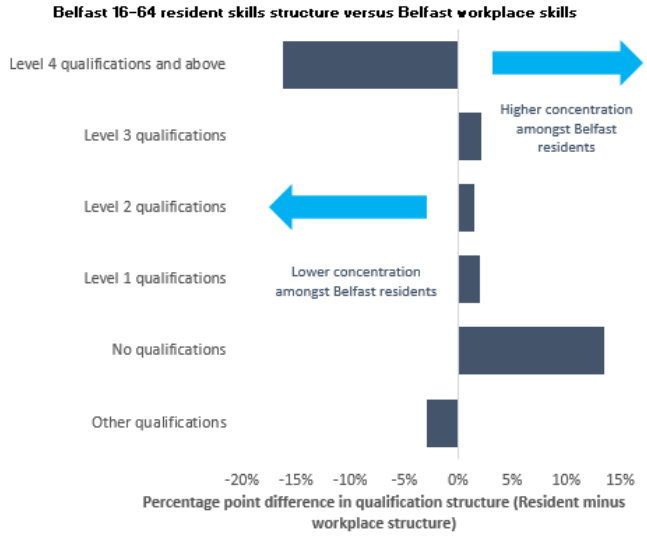
Source: NI Census, 2011
Note: Based on those aged 16-74 in employment, excluding students



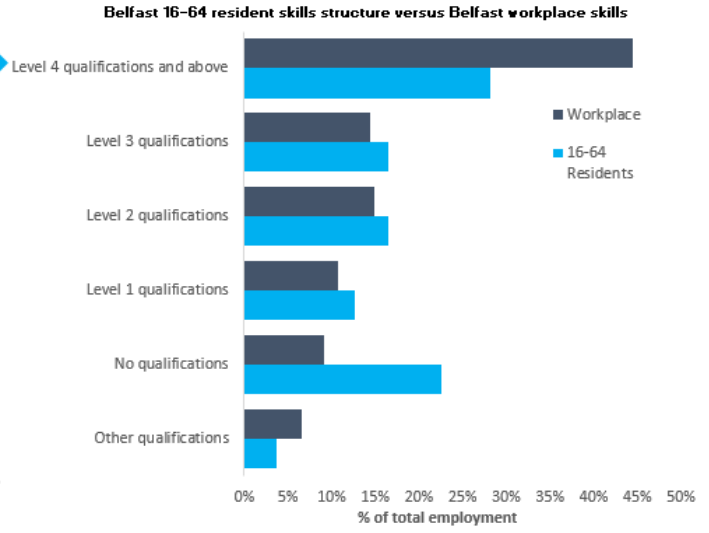
Source: NI Census 2011
Note: Based on those aged 16-74 in employment, excluding students

35. It is also worth highlighting the **significant difference between the skills profile of people working in BCC and residents of BCC**. For example, 28% of Belfast's working age residents has achieved a NQF level 4+ qualification, yet 44% of people employed in jobs located in Belfast had achieved at least an NQF level 4 qualification.

Figure 2.16: BCC resident skills compared to BCC workplace skills (2011)



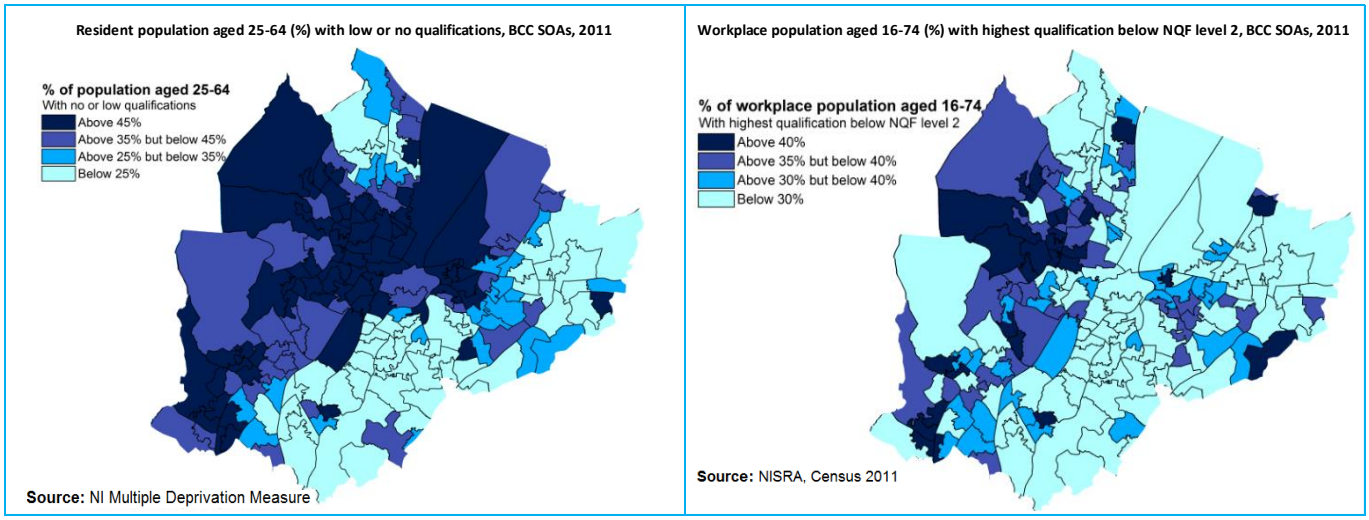
Source: NI Census 2011



Source: NI Census 2011

36. There are significant differences between the qualifications of BCC's workers and its residents at both the top and bottom of the skills distribution. While there are 10 percentage points fewer tertiary qualified people amongst BCC residents compared to its workers, there are also 13 percentage points more people with no qualifications. Differences between resident and workplace skills are apparent in small areas within BCC (see map overleaf).

Figure 2.17: BCC resident skills compared to BCC workplace skills (2011)[3]

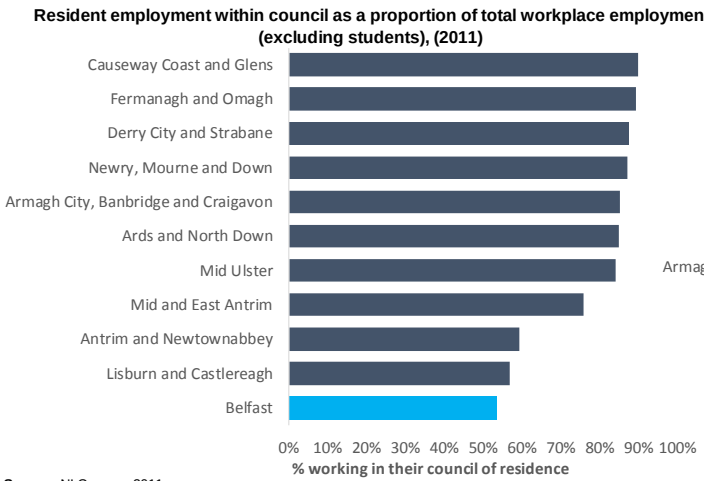


37. This is an important issue to consider and highlights the difficulty that some residents will have accessing employment within BCC. Labour mobility in NI is low relative to other parts of the UK. Therefore, **a mismatch between the skills of residents and jobs within an area will lead to wider employability challenges, particularly amongst the low skilled**.

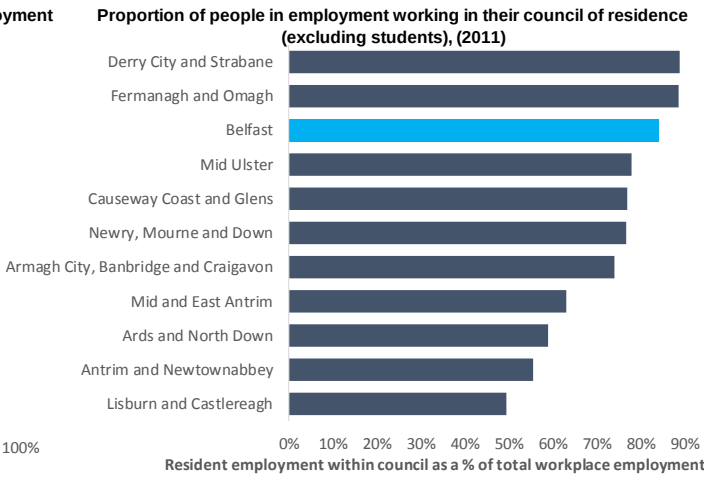
Commuting patterns

38. Much of the BCC workforce lives outside the BCC area. Approximately 47% of people with jobs based in BCC live in other council areas, the highest proportion amongst any council area. On the other side of the coin 16% of people who live in the BCC area commute to work in other LGD's.

Figure 2.18: Commuting incidence by Local Government District (2011)



Source: NI Census, 2011
Note: Based on those aged 16-74 in employment, excluding students



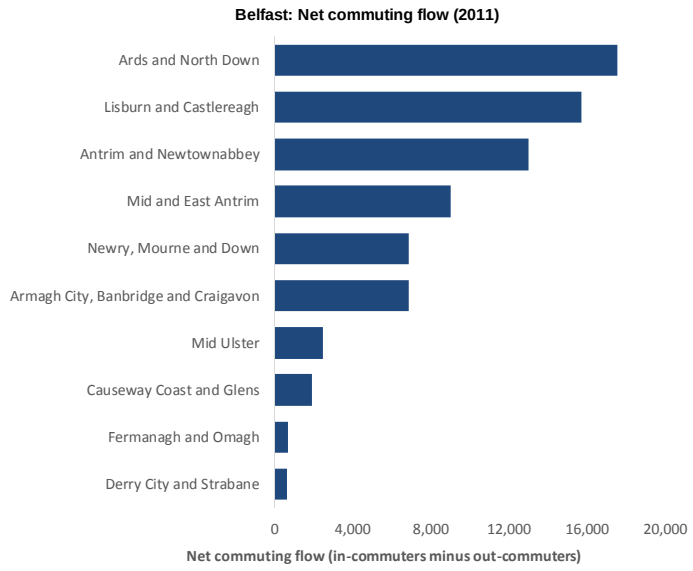
Source: NI Census 2011
Note: Based on those aged 16-74 in employment, excluding students

39. **BCC has a net-commuting inflow against all ten other LGD's in NI**. The largest inflows are with Ards and North Down; Lisburn and Castlereagh; Antrim and Newtownabbey; Mid and East Antrim; and Newry, Mourne and Down. Therefore, the

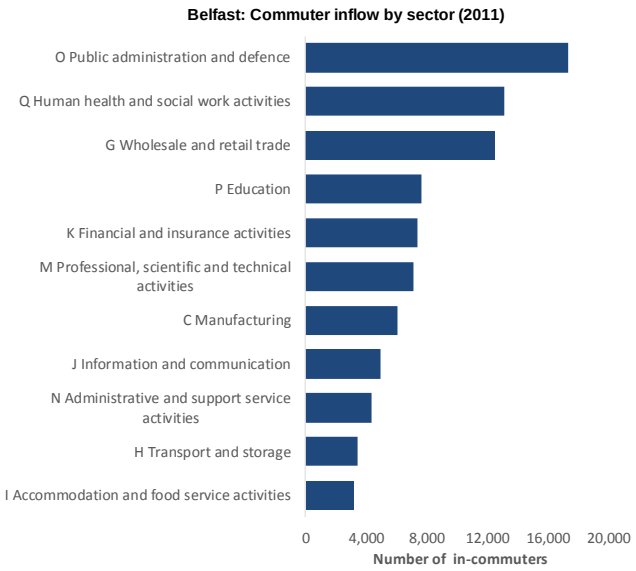
[3] Additional maps relating to the skills of the population are included in Annex D3 and Annex D4.

majority of net in-commuting to BCC consists of mobility within the Belfast City Region (BCR).

Figure 2.19: Commuting patterns in BCC (2011)



Source: NI Census 2011

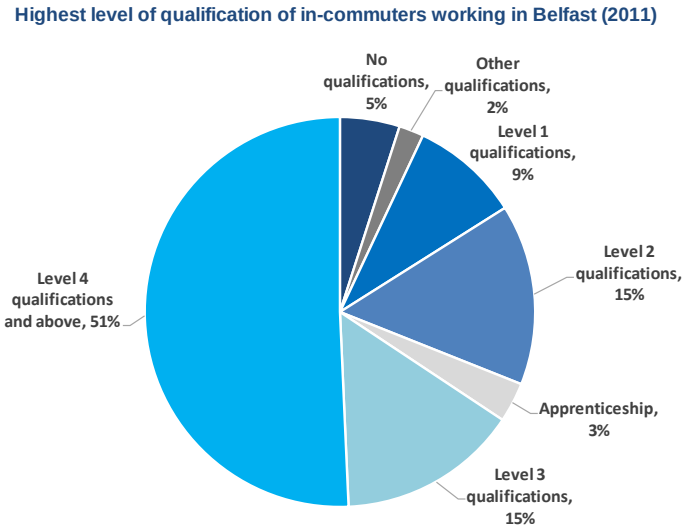


Source: NI Census, 2011

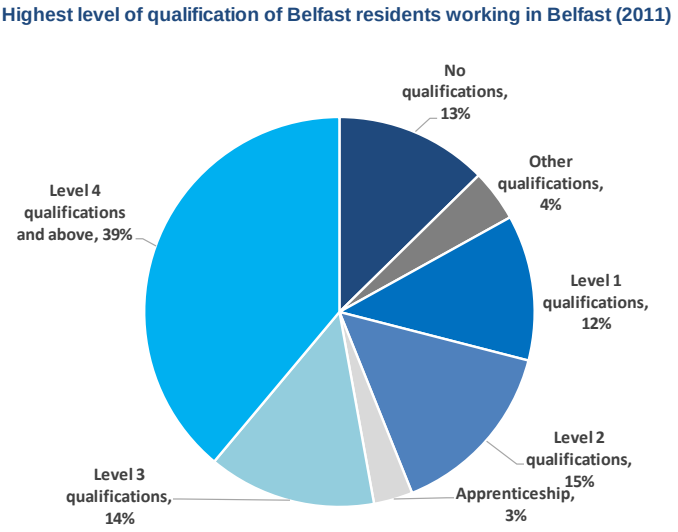
40. Commuters working in BCC are most likely to be working in sectors where BCC has relative strength such as public administration, health and retail.

41. BCC is a net-importer of skills. In other words, on average people commuting to Belfast to work from other LGD's have a higher level of qualification than BCC residents who work in Belfast.

Figure 2.20: Skill differences between residents and commuters working in BCC (2011)



Source: Census, 2011



Source: Census, 2011

42. There are sizable differences between the two groups of workers within the BCC labour market. There is a lower proportion of in-commuters who have a low level of qualification, with 16% having a qualification below NQF level 2 compared to 29% amongst Belfast residents working in BCC.

43. Similarly, a lower proportion of Belfast residents working in BCC have achieved at least a tertiary level qualification (NQF level 4+). Over half (51%) of in-commuters working in BCC have achieved a tertiary level qualification compared to less than two fifths (39%) of Belfast residents working in BCC.

Key points and policy remarks

Key points

44. There are a number of key points which have been highlighted in this chapter:

- BCC accounts for 29% of total workforce jobs in NI, and has accounted for 36% of job growth in NI over the past five years.
- BCC has a high share of employment in sectors that are highly skill intensive such as public administration, professional services and information communication.
- Over the past five years many of the sectors which account for the largest proportion of employment in BCC (public administration, retail etc.) have grown slowly or decreased over the past five years. The administration and support services sector has been the fastest growing sector over the past five years which is of a sizable critical mass.
- The fastest growing occupations in BCC are science and technology professionals and computer service occupations.
- Workplace employment in BCC is heavily weighted towards high-level skills, with over two fifth of people working in BCC having achieved a tertiary level qualification.
- There are significant differences in skills across generations, with older workers more likely to have low-level skills. Therefore, the qualifications profile within Belfast is likely to improve over time as older workers retire and are replaced by younger and better qualified workers.
- The skills profile of BCC residents is much lower than people employed in the Belfast workplace. BCC has a high commuting inflow and is a net importer of high skills.

Policy remarks

45. The above data has a number of implications for policy:

- The mismatch between the skills of residents and jobs within the BCC will lead to wider employability challenges. This is particularly acute amongst low-skilled residents who tend to be associated with lower levels of labour mobility.
- BCC will continue to be reliant upon commuter flows due to the skill differences between BCC residents and workers. This will have implications on wider economic policy. Over the medium-term it will be important to strengthen connectivity to Belfast and consider measures to reduce congestion. Over the longer-term, upskilling Belfast residents and encouraging more high skilled people to live in the city could help relieve pressure on the transport network.
- Although older people have lower levels of qualifications, many have gained skills 'on the job'. This raises the issue of accreditation of workplace skills and a recognition of prior learning. This can improve the occupational mobility of older workers by improving their signalling power within the labour market.

3. Belfast's economy: High growth scenario

Introduction

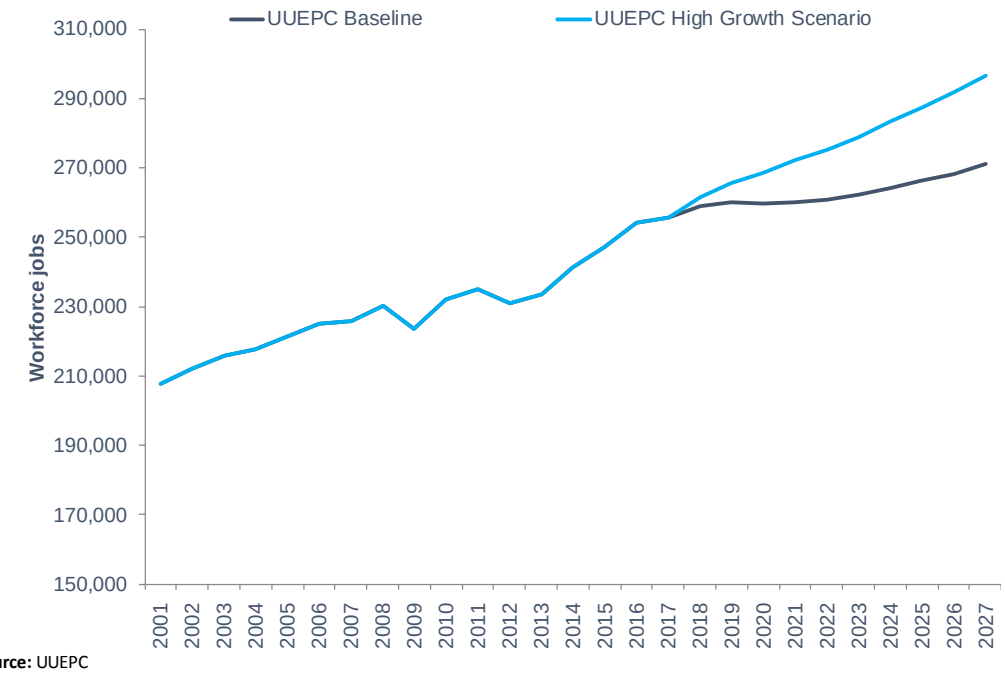
1. This chapter provides an overview of how Belfast could potentially perform if it is to achieve its economic objectives.

2. BCC's economic strategy, the Belfast Agenda, includes an objective to create 46,000 employee jobs[4] between 2015 and 2035. It is not possible to recreate a high growth scenario which directly correlates to the Belfast Agenda since skills forecasting needs to be based on a scenario including all types of jobs (i.e. self-employment). In addition, UUEPC's approach to skills forecasting is based on a ten-year time horizon. Although the high growth scenario does not directly match the Belfast Agenda, it is consistent with the Belfast Agenda's ethos and ambition.

Job creation

3. In this high growth scenario UUEPC estimates that employment in BCC will grow from 255,820 in 2017 to 296,650 in 2027. Although this is an ambitious rate of growth it is not inconsistent with growth rates achieved over the 2012-17 period.

Figure 3.1: Workforce jobs in BCC, high growth and baseline, (2001-27)



Source: UUEPC

4. It is estimated that under this high growth scenario total workforce jobs will be 25,630 above the baseline in 2027. In other words, **under a high growth scenario the BCC economy is projected to create 2.7 times as many additional jobs**

[4] Employee jobs is the largest category of employment but does not include all forms of employment. It does not include, self-employment, those on Government training programmes, HM forces and some other categories of employment (e.g. unpaid family workers).

than it would in a baseline scenario where policy interventions associated with the Belfast Agenda did not occur.

Sector growth

5. The sectors contributing the largest absolute increase in jobs over the period 2017-27 are professional scientific and technical services (10,320); information and communication (8,120); and finance and insurance (3,500).

Table 3.1: Comparison of baseline and high growth scenario by sector (2017-27)

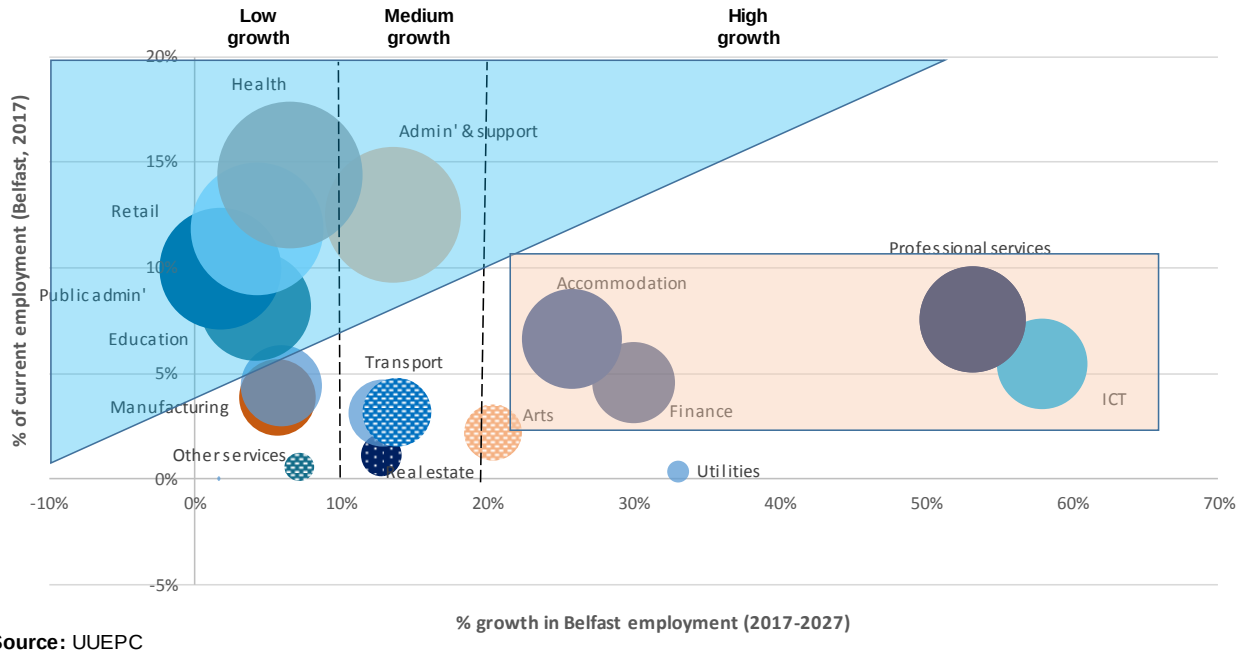
Industry	Total jobs 2017 baseline	Job growth 2017-27		% change in jobs - Compound annual growth rate	
		Baseline	High growth	High growth 2017-27	Actual 2012-17
Agriculture	75	-11	-9	-1.2%	0.0%
Mining	23	+0	+0	0.2%	-21.5%
Manufacturing	11,307	+342	+669	0.6%	2.0%
Electricity & gas	882	+205	+291	2.9%	13.5%
Water supply & waste	1,410	+48	+100	0.7%	5.8%
Construction	7,955	+498	+1,019	1.2%	-0.8%
Wholesale & retail	30,368	+994	+1,294	0.4%	0.0%
Transport & storage	8,025	+782	+1,110	1.3%	1.0%
Restaurants and hotels	16,940	+2,858	+4,361	2.3%	4.9%
Information & communication	14,015	+2,644	+8,122	4.7%	4.3%
Finance & insurance	11,662	+397	+3,495	2.7%	-0.6%
Real estate	2,906	+152	+369	1.2%	-4.3%
Professional scientific & technical	19,416	+3,406	+10,320	4.4%	4.4%
Administrative & support services	32,003	+2,587	+4,325	1.3%	7.5%
Public admin & defence	25,561	-1,279	+436	0.2%	-1.3%
Education	20,925	+381	+858	0.4%	1.5%
Health & social work	36,831	+564	+2,381	0.6%	0.5%
Arts & entertainment	5,589	+564	+1,138	1.9%	2.7%
Other service activities	9,924	+70	+555	0.5%	7.5%
Total	**255,817**	**+15,202**	**+40,835**	**1.5%**	**2.1%**

Source: UUEPC

6. Relative to the baseline, the main sectors generating the additional 25,630 job impact by 2027 are professional scientific and technical services (6,910 above baseline); information and communication (5,480 above baseline); and finance and insurance (3,100 above baseline).

7. Under the high growth scenario much of the job growth is concentrated in sectors which currently have a relatively small share of total jobs in BCC. **Many of BCC's staple sectors such as public services and retail are forecast to grow much slower over the coming decade**. However, it is worth noting that even though slow growth rates are recorded in some of BCC's larger sectors, job growth in absolute terms is still significant (e.g. health).

Figure 3.2: BCC sector profile by proportion of workforce jobs and job growth (2017)

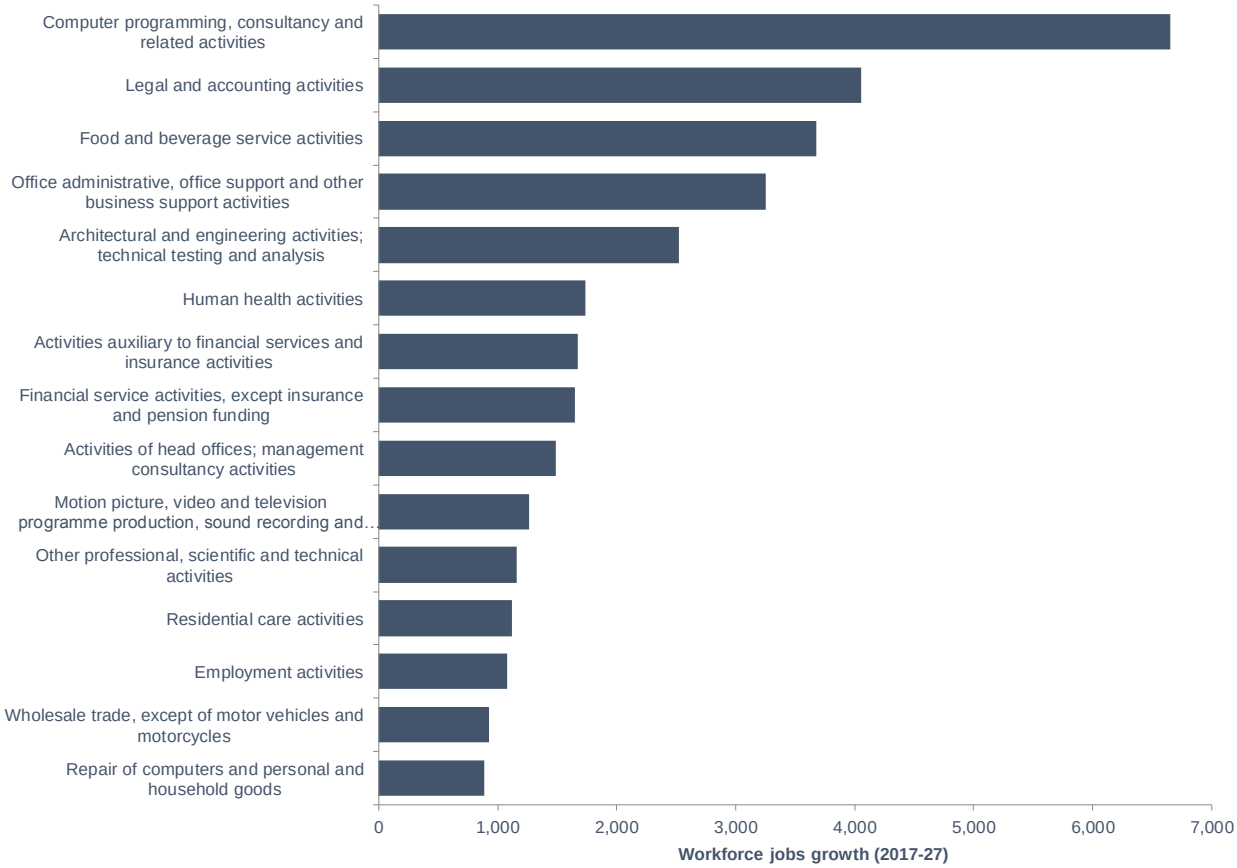


Source: UUEPC

Note: Triangle highlights the five largest sectors. Square highlights the fastest growing sectors in NI high growth scenario.

8. At a more granular level the main sectors generating the job growth are: Computer programming, consultancy and related activities (6,660); legal and accounting activities (4,050); food and beverage service activities (3,680); office administrative, office support and other activities (3,250); and architectural and engineering activities (2,520).

Figure 3.3: Workforce jobs in BCC, 2 digit SIC (2017-27)



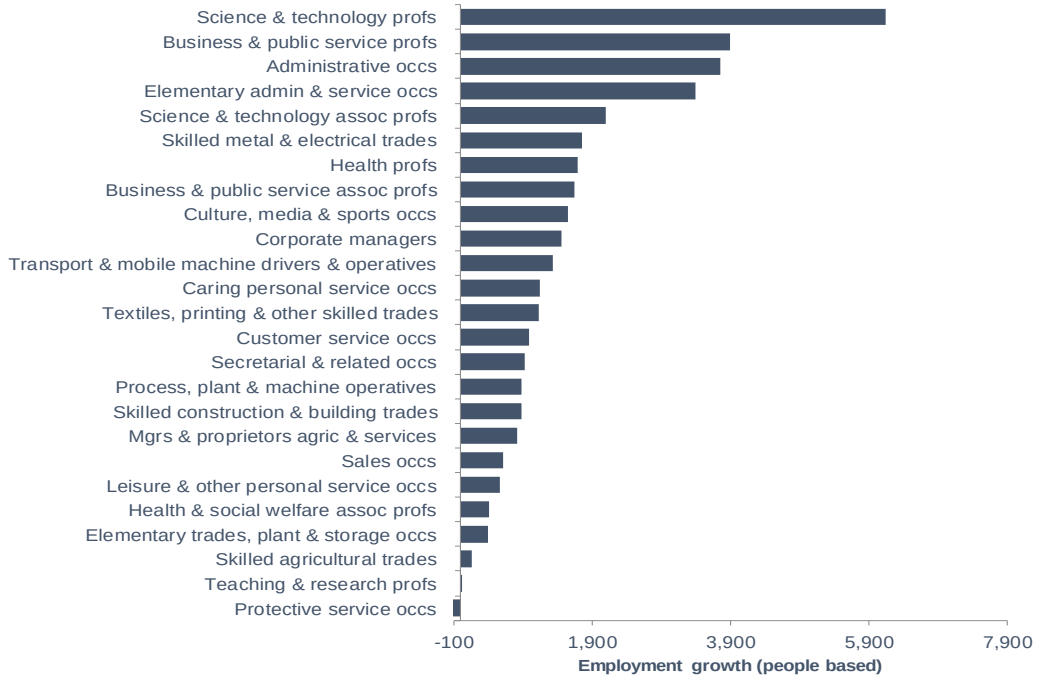
Source: UUEPC

9. A considerable proportion of growth is concentrated in sectors that are considered to be tradable, or linked to operations in a wider global firm. This should be considered more sustainable than sectors which fuelled job growth during the pre-recession decade such as retail and public services whereby future job growth is under pressure from squeezed incomes, austerity and advancements in labour saving technologies.

Occupation growth (people-based)

10. The occupations accounting for the majority of the net occupation growth over the 2017-27 period are: science and technology professionals (6,140); business and public services professionals (3,890); administrative occupations (3,760), elementary administration and service occupations (3,390); and science and technology associate professionals (2,090) occupations.

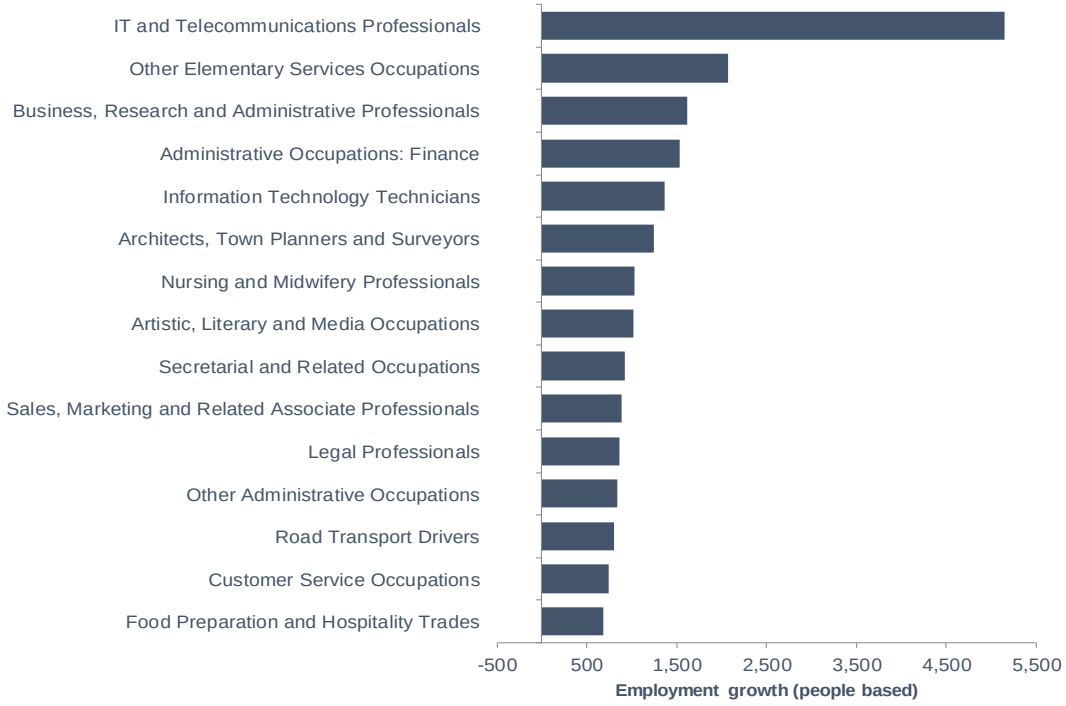
Figure 3.4: BCC employment growth, people based, 2 digit SOC (2017-27)



Source: UUEPC

11. More detailed occupation categories provide a clearer indication of the key growth occupations. By 2027 the largest contributors to job growth are: IT and telecommunications professionals (5,150); other elementary occupations (2,070); business, research and administrative professionals (1,620); administrative occupations in finance (1,530); and information technology technicians (1,370).

Figure 3.5: BCC employment growth, people based, 3 digit SOC (2017-27)



Source: UUEPC

Key points and policy remarks

Key points

12. There are a number of key points which have been highlighted in this chapter:

- Skills forecasting is uses a high growth scenario, which is based upon implementation of successful policy initiatives.
- Under a high growth scenario BCC is projected to create 2.7 times as many jobs than forecast under the baseline scenario.
- Many of BCC's staple sectors such as public services and retail are forecast to grow at relatively slow rates over the coming decade.
- The highest rates of job growth are forecast to be in the professional services and ICT sectors.
- Over the coming decade the highest rates of job growth will be in: science and technology professionals; business and public; administrative occupations; and elementary administrative and service occupations.

Policy remarks

13. The above data has a number of implications for policy:

- It is prudent to plan for skill needs in an aspirational nature based on the ambitions of economic policy. There is a risk of oversupplying skills if the aims of economic policy are not achieved. Although this involves a personal cost to individuals who have invested in their own skills development, the potential cost is lower compared to undersupplying skills. If businesses are unable to find the skilled labour required it depresses competitiveness, productive capacity and holds back future job growth.

- Although it is advised that skills policy should plan for success, it is important to heave measure in place to mitigate the effects of any potential oversupply of skills. This contingency planning could take many forms. For example, conversion courses for workers made redundant, training rights for young people unable to secure employment after graduation etc.

4. Skill requirements for tomorrow's economy – High growth scenario

Introduction

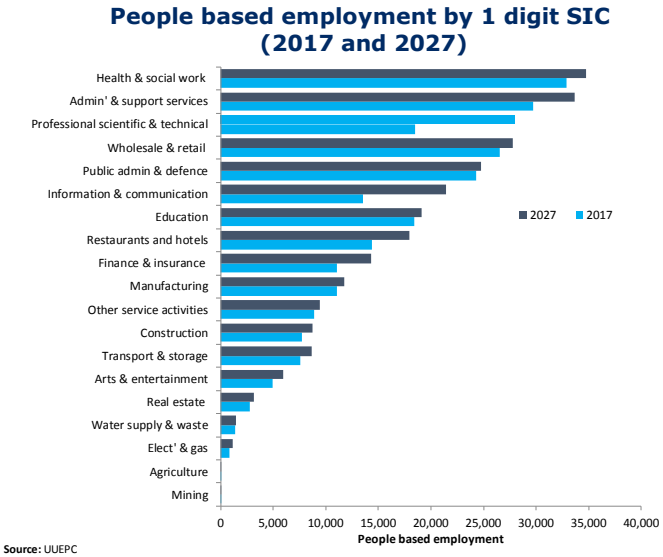
1. This chapter provides an overview of future labour demand under the high growth scenario outlined in the previous chapter.

People based employment growth

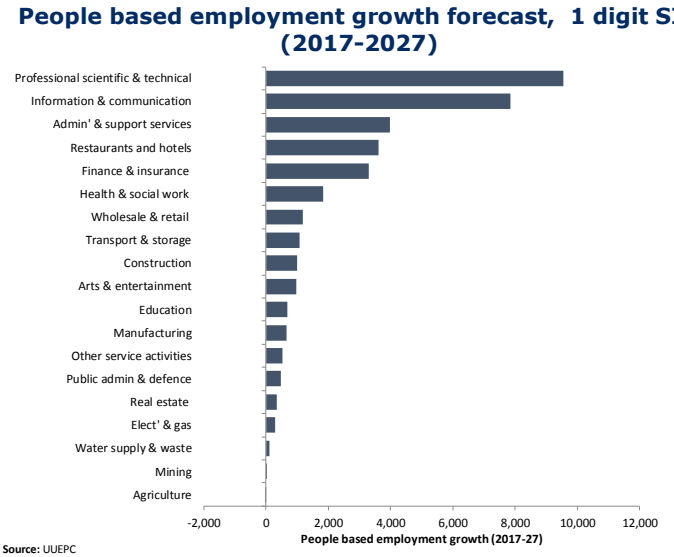
2. When forecasting the demand for skills an important step is to convert workforce jobs into 'people based' terms. This is an important step as workforce jobs can overstate the demand for skills. For example, it is possible for a worker to have more than one job.

3. The figure below presents the high growth scenario after converting to people based terms using the jobs to people ratio from the 2011 Census. The additional 40,800 jobs created in the high growth scenario translates as 36,600 people.

Figure 4.1: People based employment by 1 digit SIC (2017-27)



Source: UUEPC



Source: UUEPC

Expansion and replacement demand concepts

4. Total labour demand is represented not only by employment growth, but also vacancies created by workers leaving their jobs. The following points below provide key definitions relating to labour demand:

- **Expansion demand** is the additional jobs created due to growth in a sector.
- **Replacement demand** refers to the number of positions which become available as a result of staff leaving employment (typically due to retirement, family reasons, ill health or to move to another sector).
- **Net replacement demand** is the difference between all leavers from employment – to retirement, inactivity, unemployment, other occupations and out migration - and joiners to employment – from unemployment, inactivity (excluding education leavers) and other occupations.

- **Net requirement from education and migration** indicates the number of vacancies that can not be filled from within the existing labour market and therefore must be met from those leaving education and/ or from migration. The annual average net requirement[5] does not include the positions to be filled by labour market participants from other sectors, from unemployment or from economic inactivity.
- **Annual average gross demand** in simple terms, refers to all vacancies to be filled in a year. It is the total expansion and replacement demand for staff per annum and the jobs are filled by those currently working in the labour market, those currently out of work and also those from education and migration.

5. The figure of most interest is the net requirement from education and migration (net replacement demand, plus expansion demand). This measures the quantum of vacancies for education leavers and migrants. It takes account of 'churn' in the labour market. Skills demand associated with replacement demand is dependent largely on the existing stock and skill needs of current jobs. It can be compared directly to education outputs and the level of migrant inflows and is therefore useful for skills and wider workforce planning.

6. The focus on vacancies for education leavers and migrants should not be interpreted to mean that job opportunities for those out of work are ignored. Rather it is the case that joiners from unemployment and inactivity are already factored into replacement demand assumptions, and will essentially compete with education leavers and migrants for total arising vacancies.

Demand for labour in BCC

7. While the net change in the stock of jobs – technically termed expansion demand - is often more widely understood and 'visible' within the economy as a driver of future demand, **it remains the case that, future skills and employability demand will still be significantly determined by net replacement demand.**

8. Labour demand is estimated based upon an analysis of labour market flows in the Labour Force Survey (LFS). The table below summarises expansion and replacement demand forecasts for the BCC economy over the 2012-17 and 2017-27 periods.

Table 4.1: BCC – Expansion and replacement demand

Demand category	2012-17 (annual)	2017-27 (annual)
(A) Gross demand	21,970	24,000
(B) Expansion demand	3,200	3,540
(C) Replacement demand	18,780	20,460
(D) Filled from within the existing labour market	14,000	15,050
(E) Net replacement demand	4,780	5,420
(F) Net requirement from education and migration	**7,970**	**8,950**

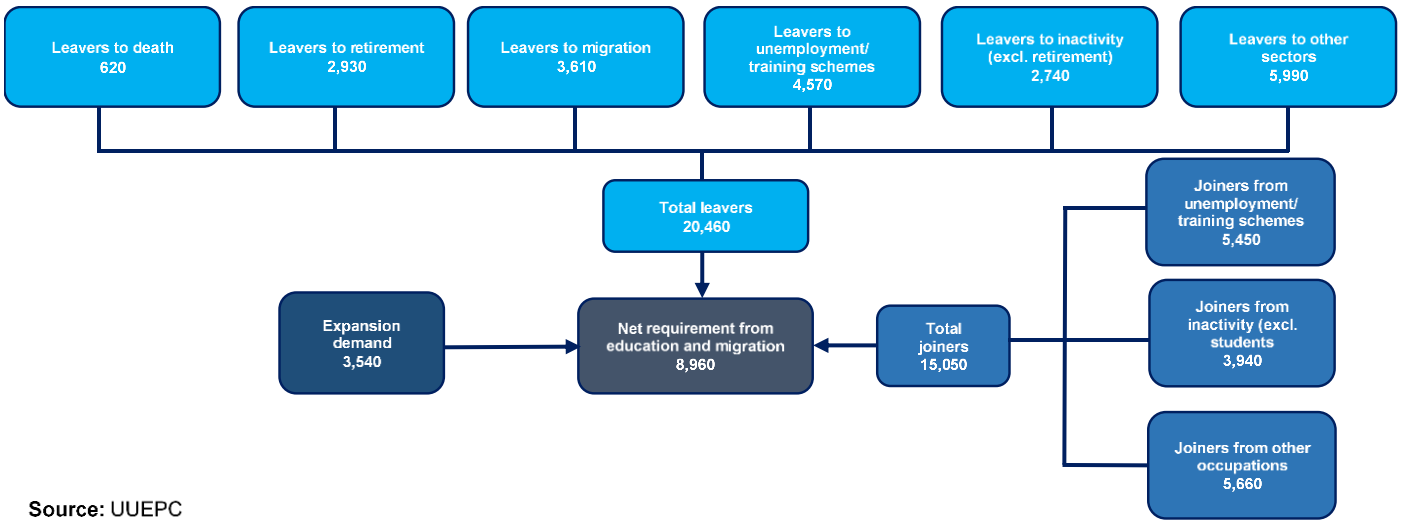
Source: UUEPC

Relationship between rows: A = C+B; E = C-D; F = E+B

[5] From this point onwards 'net requirement from education and migration' and 'net requirement' are used interchangeably.

9. As is illustrated in the figure below the largest component of labour demand comes from replacing workers who have created a vacancy by leaving their position (for retirement, sickness, moving to another job etc.). However, most of these vacancies are filled by people already in the labour market (e.g. job movers, people leaving the unemployment register etc.).

Figure 4.2: Net requirement from education and migration (2017-27)

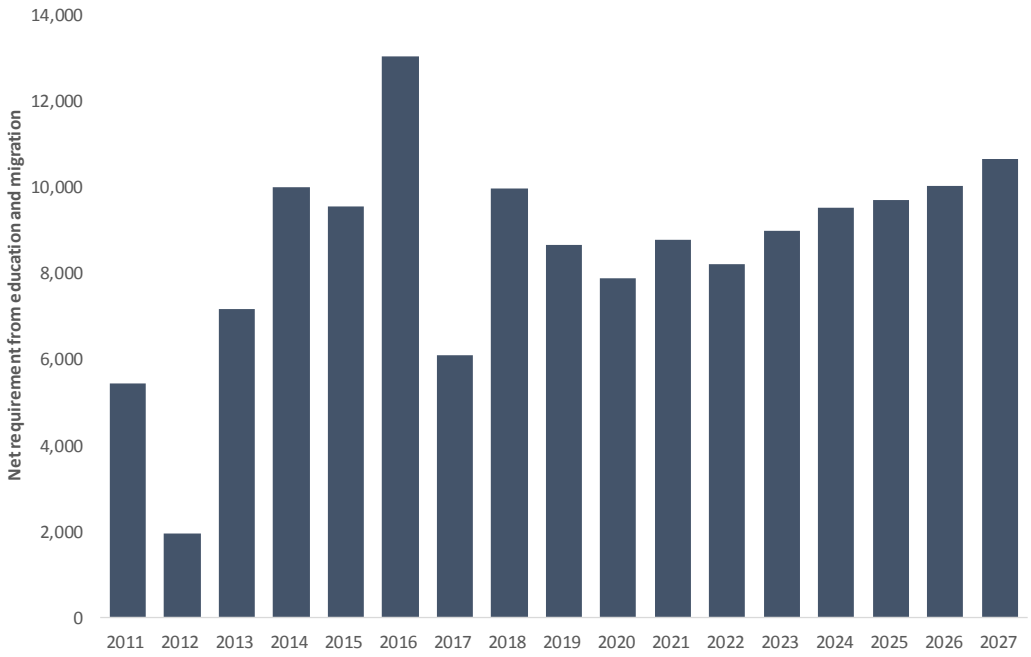


Source: UUEPC

10. Vacancies that cannot be filled by people already in the labour market must be filled either by leavers from the education system or by migrants. This is known as the net requirement from education and migration, and in the BCC area is equivalent to 8,995 people per annum over the 2017-27 period. It is important to note that the largest component of the net requirement from education and migration comes from replacement demand. Even under a high growth scenario net replacement demand over the next ten years (5,416 per annum) is still forecast to be 1.5 times larger than expansion demand (3,539 per annum). In other words, **the labour market will continue to create a plentiful supply of job opportunities even during periods of low growth.**

11. The net requirement is lower in years where there is low (or negative) employment growth. For example, in 2012 where total employment in BCC decreased, the net requirement was much lower. Although expansion demand was negative, replacement demand was larger than the fall in employment and therefore maintained a positive net requirement.

Figure 4.3: BCC – Net requirement from education and migration (2011-27)



Source: UUEPC

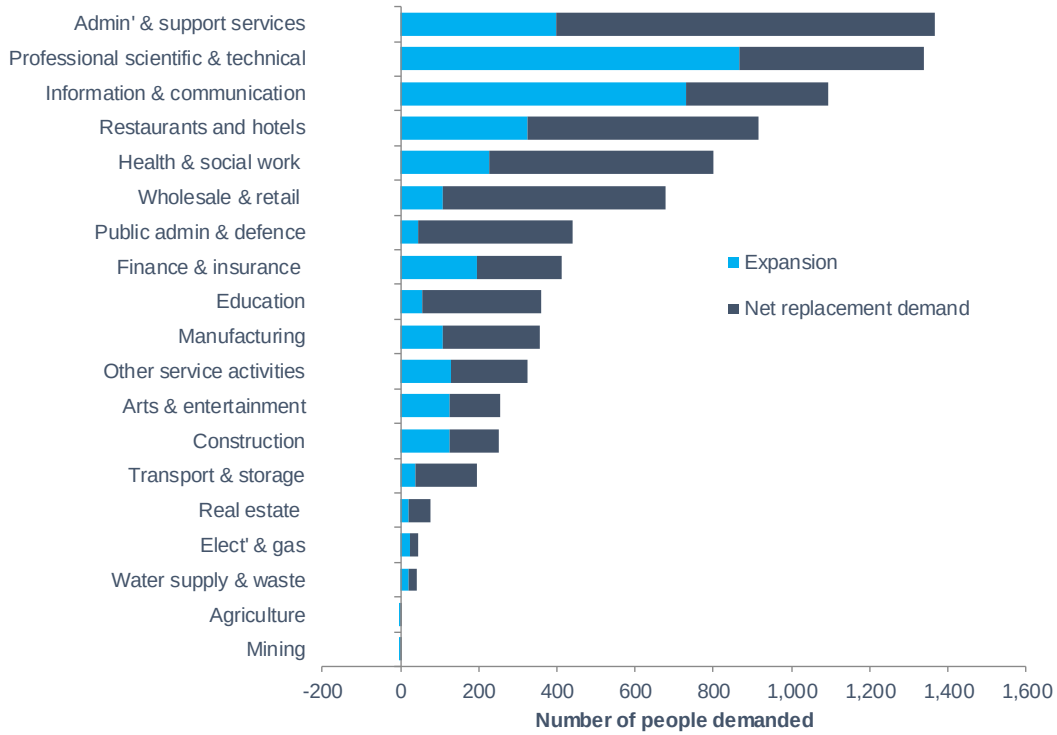
In what sectors will labour demand be concentrated?

12. Although sectors such as professional services and information and communications are forecast to grow rapidly, total employment remains relatively small. For example, in 2017 in BCC the number of people working in retail is approximately double that of the information and communications sector. **As replacement demand is a function of existing jobs, it will be largest in sectors which are already large in scale**.

13. In high growth sectors expansion demand accounts for a more significant proportion of overall labour demand. For example, professional, scientific and technical services is a sector which is relatively small in scale, but is forecast to experience rapid growth. This leads to expansion demand accounting for a much larger proportion (65% of the net requirement) of overall demand when compared to other sectors. The composition of labour demand is similar in the information and communication sector, where over two thirds (67% of the net requirement) of overall demand is an expansion of the sector.

14. In some other sectors there is a sizeable labour demand driven by replacement demand rather than the expansion of the sector. For example, in the wholesale and retail sector over four-fifths of labour demand comes from vacancies created by workers who leave their jobs. This is due not only to the fact that retail is a large-scale sector in BCC, but also due to the nature of the sector itself. The sector has high entry and exit rates as many people work in the sector on a short-term basis. The sector often acts as a temporary home for people who have been unable to find employment in their desired occupation, or short-term employment for students.

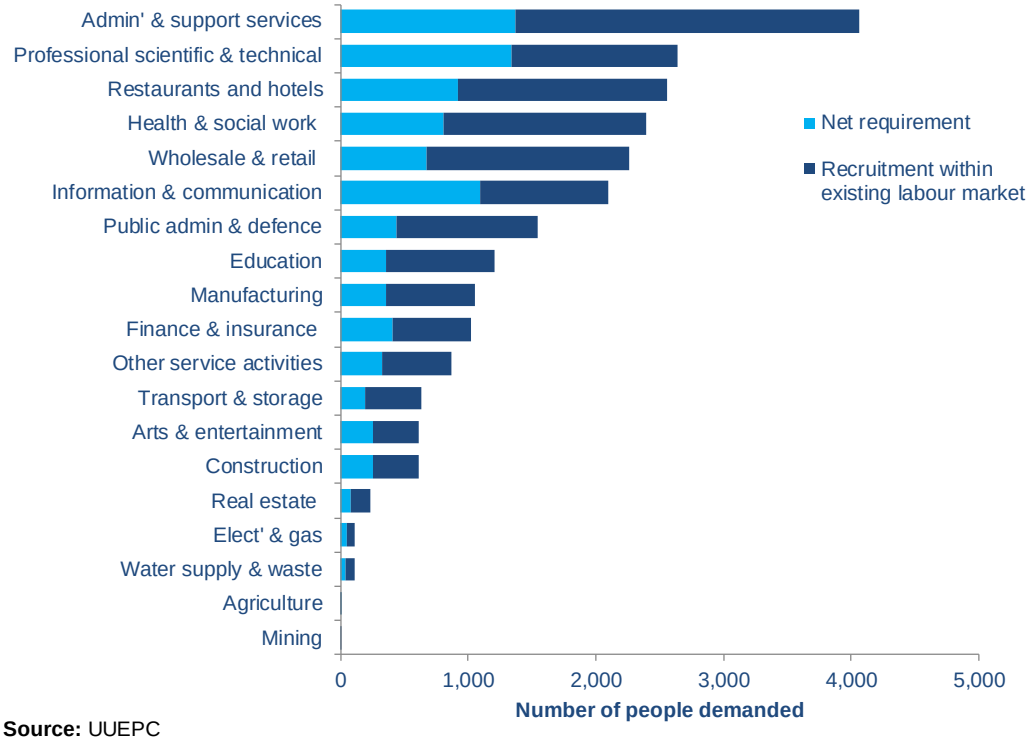
Figure 4.4: Average annual net requirement from education and migration in BCC by 1 digit SIC (2017-27)



Source: UUEPC

15. There is a noticeable squeeze in the expansion demand within sectors which have traditionally been low skilled with regard to formal qualification (e.g. wholesale and retail, and manufacturing). Part of the reason for this is slowing labour demand for these occupations alongside advances in labour saving technology.

Figure 4.5: Average annual gross demand in BCC, 1 digit SIC (2017-27)

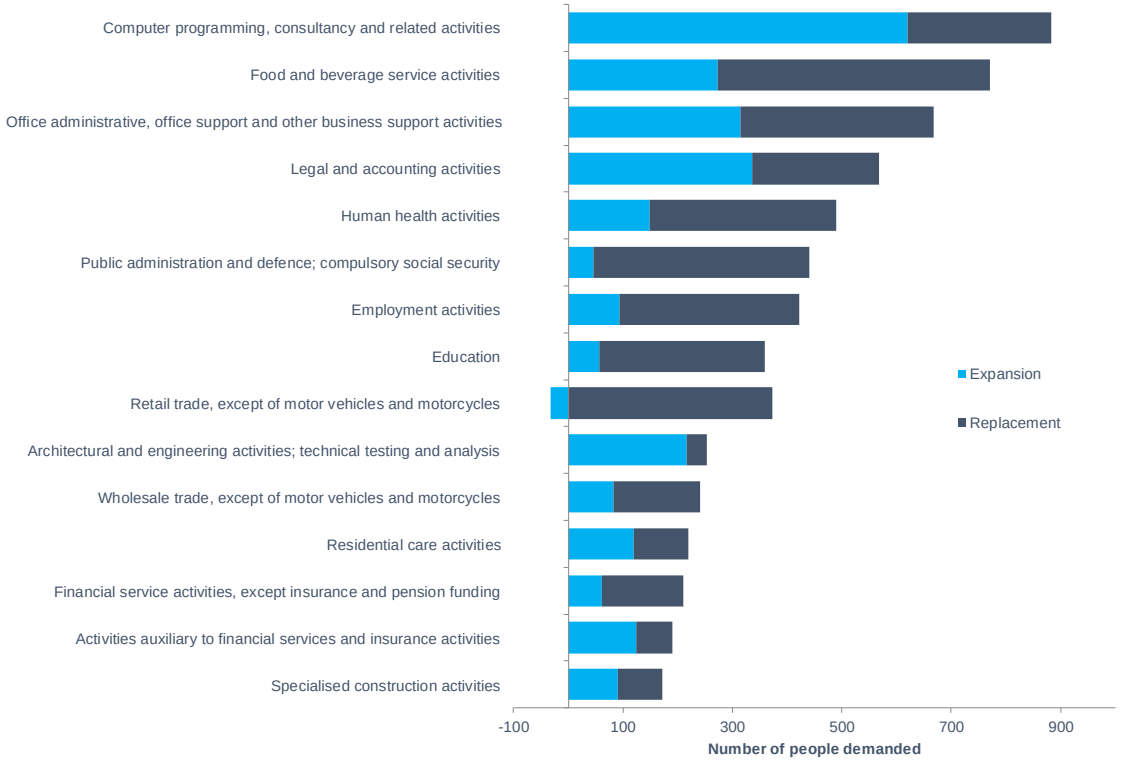


Source: UUEPC

16. However, although there is little demand for these occupations from the education system that is not to say that there will not be job opportunities. When measured by gross demand there are a greater number of job opportunities, with the majority of those opportunities being filled from within the existing labour market. In other words, although these jobs are associated with low formal qualifications, they are filled by experienced workers moving between jobs or re-joining the labour market after a period of unemployment or inactivity. An important point to note is that workers taking up jobs in these occupation from within the existing labour market are likely to have a low level of formal qualification but are **experienced workers and thus not necessarily low skilled**.

17. Looking at the composition of labour demand in more detail, the figure below summarises the top 15 sectors when ranked in order of the quantum of people demanded as part of the overall net requirement.

Figure 4.6: Average annual requirement from education and migration in BCC, top 15 industry sectors, 2 digit SIC (2017-27)



Source: UUEPC

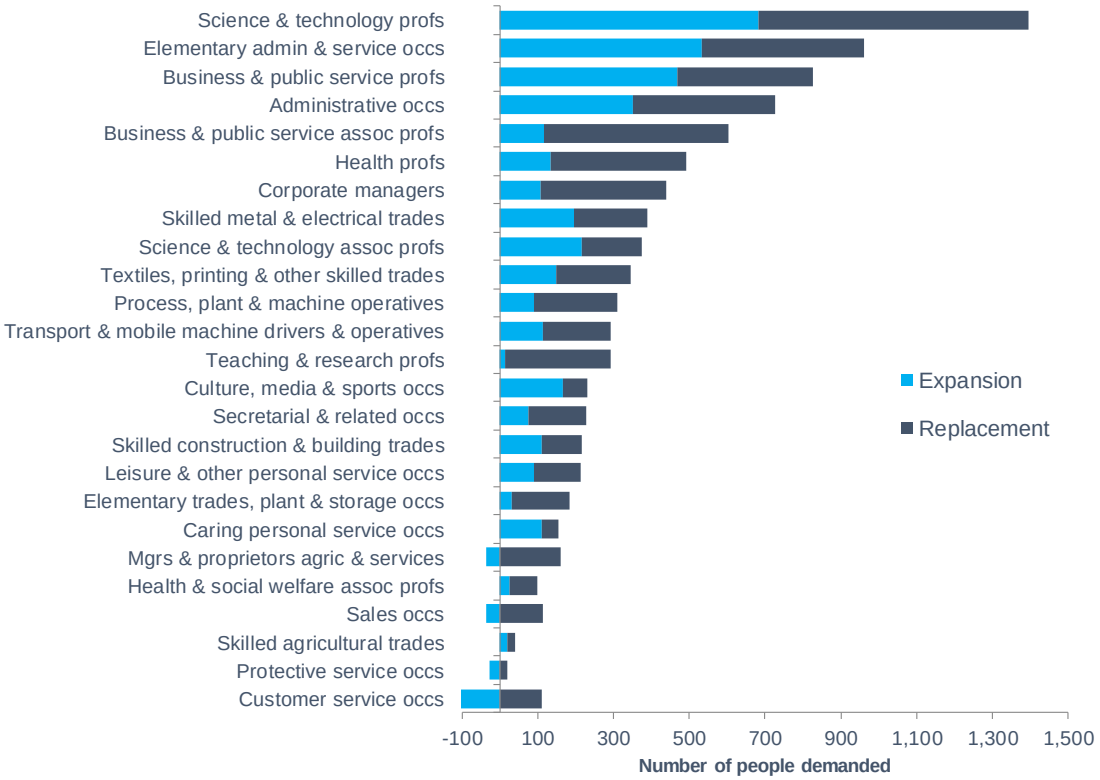
18. The top 15 sectors on the 2 digit SIC classification account for 58% of the overall net requirement. The sector with the highest labour demand is computer programming, consultancy and related activities (10%). This is followed by food and beverage service activities (9%).

In what occupations will labour demand be concentrated?

19. In the BCC area science and technology professionals will provide the most job opportunities over the coming decade requiring 1,400 people from outside the existing labour market, driven by both rapid expansion and large replacement demand. This represents 16% of the overall net requirement from education and migration in BCC.

20. The next largest 'high demand' occupations are elementary administration and service occupations (11%); business and public service professionals (9%); administrative occupations (8%); and business and public service associate professionals (7%).

Figure 4.7: Average annual requirement from education and migration in BCC, 2 digit SOC (2017-27)

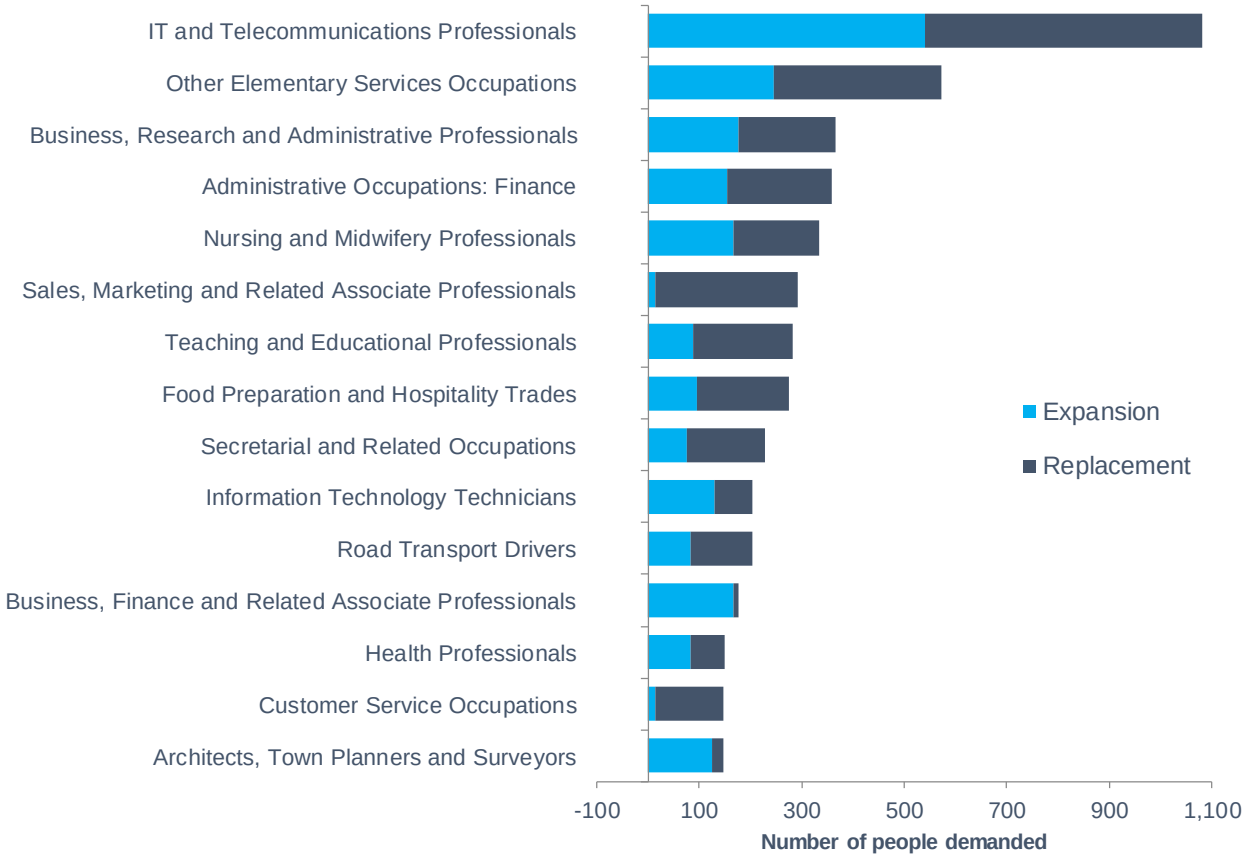


Source: UUEPC

21. Using more detailed 3 digit SOC classifications IT and telecommunications professionals have the largest net requirement, at 1,090 people per annum. This is the largest occupation measured by net requirement and is directly related to high rates of growth in the IT sector in the high growth scenario.

22. Overall the top 15 occupations account for 45% of the total net requirement. Other top ranking occupations include elementary services occupations; business research and administrative professionals; sales, marketing and related associate professionals and administrative occupations in finance.

Figure 4.8: Average annual requirement from education and migration in BCC, top 15 industry sectors, 3 digit SOC (2017-27)



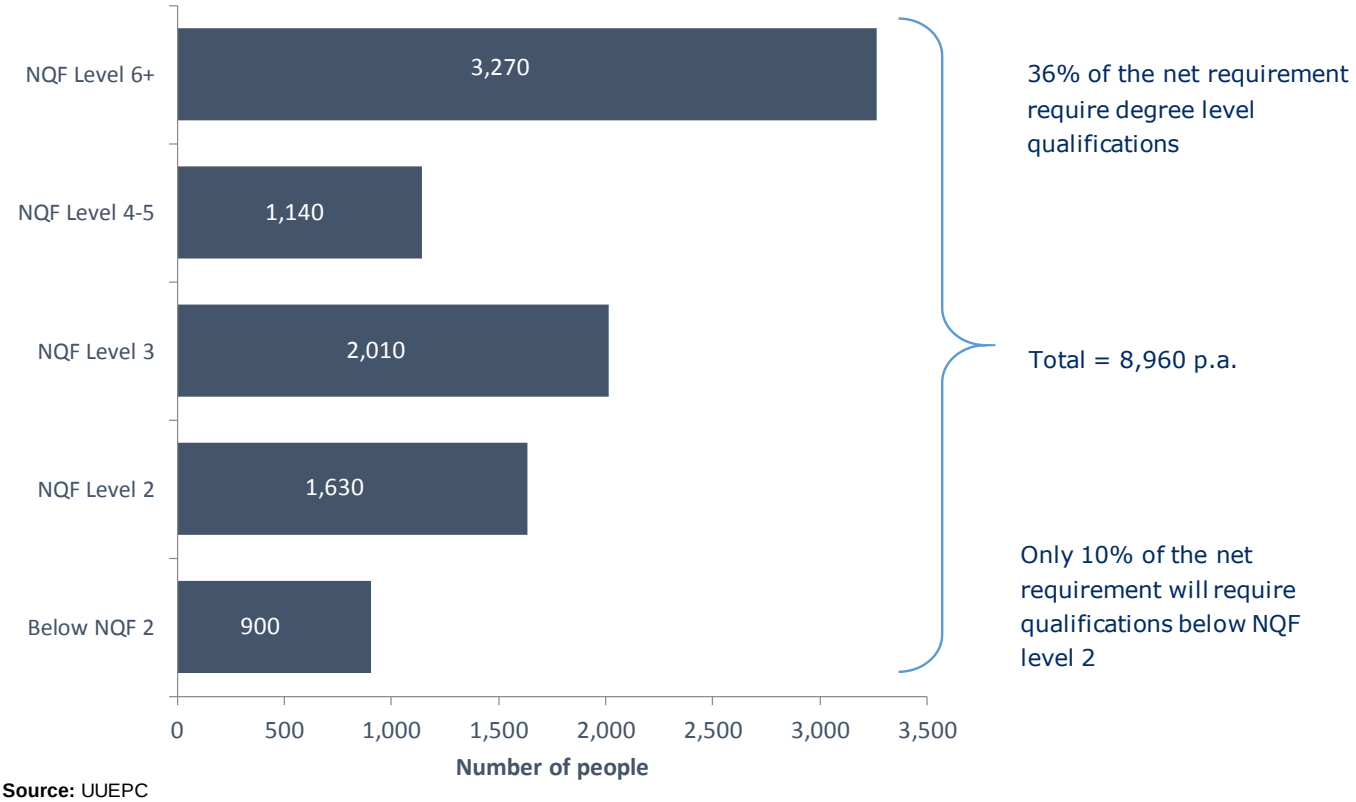
Source: UUEPC

The demand for qualifications

23. Using the UUEPC skills model it is possible to estimate the net requirement by the highest NQF level. However, it is important to acknowledge that skills and qualifications are not the same. **Labour can be high skilled yet have a low level of formal qualification**.

24. The figure overleaf provides an overview of the demand for skills disaggregated by the highest level of formal qualification according to the NQF classification associated with the UUEPC high growth scenario.

Figure 4.9: Average annual net requirement for skills in BCC (2017-27)

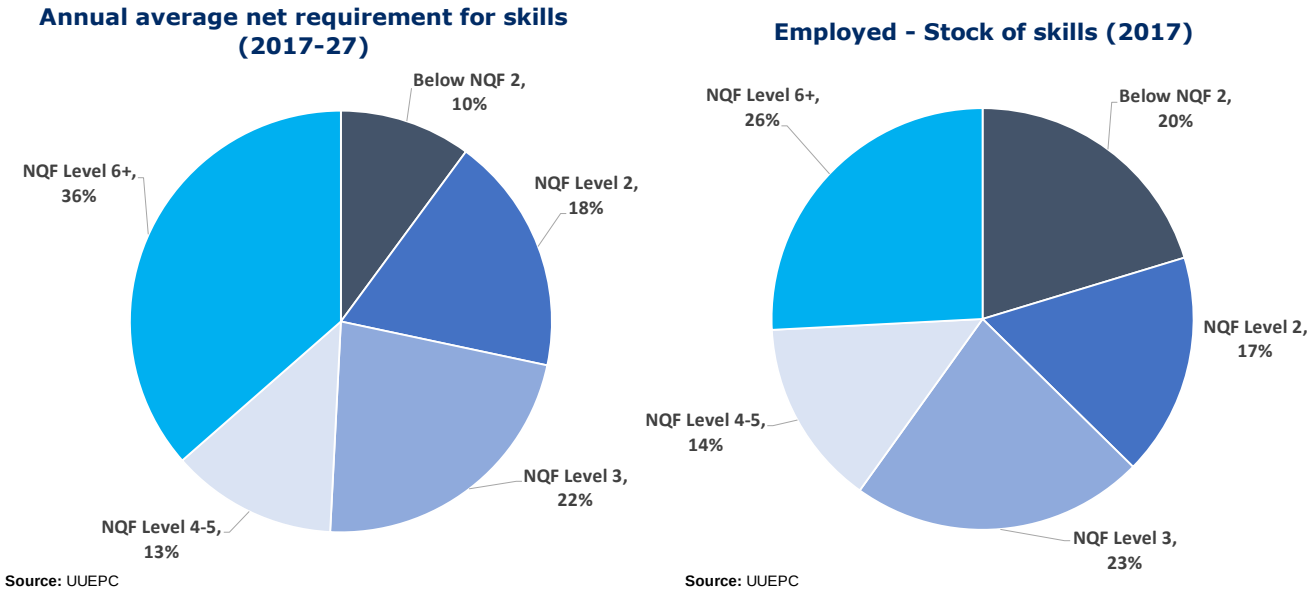


Source: UUEPC

25. Looking forward, it is estimated that **36% of the total demand will require at least an undergraduate degree**. Only 10% of job opportunities will be available to individuals with a qualification level equivalent to NQF level 2 or below. **With such a low proportion of future job opportunities likely to be available to this group it highlights the importance of tackling NI's education underachievement problem** and minimising the number of school children entering the labour market with qualification levels below the minimum level expected for most modern forms of employment.

26. Increases in HE participation levels and increasingly qualification hungry employers are driving up the qualifications required across the economy. The implication is that **the future skill needs of the economy look very different to the current stock of skills across the entire workforce**. Albeit, that older workers are less well qualified (but not necessarily low skilled) and drag down the qualification profile of the workforce.

Figure 4.10: Average annual net requirement for skills in BCC (2017-27)



27. Relative to other parts of NI the BCC area maintains a relatively high future demand for mid to low level skills, with **51% of the net requirement for jobs requiring a level of qualification equal to NQF level 3 or below**. This is due to the high prevalence of employment in the BCC area which is not necessarily associated with high qualification requirements such as retail and hospitality. These sectors also tend to be fluid, with more rapid labour entry and exit rates. This results in these sectors contributing significantly to overall demand by virtue of having relatively high replacement demand.

Profile of NQF level 6+ skills demand

Industry profile of NQF level 6+ skills demand

28. There are differences in the graduate intensity of the net requirement across sectors. For example, the information and communication sector is highly graduate intensive with almost two-thirds (64%) of the net requirement being associated with having a degree level qualification (NQF level 6+). Other sectors are less graduate intensive, such as administration and support services where 29% of the net requirement requires a degree level qualification.

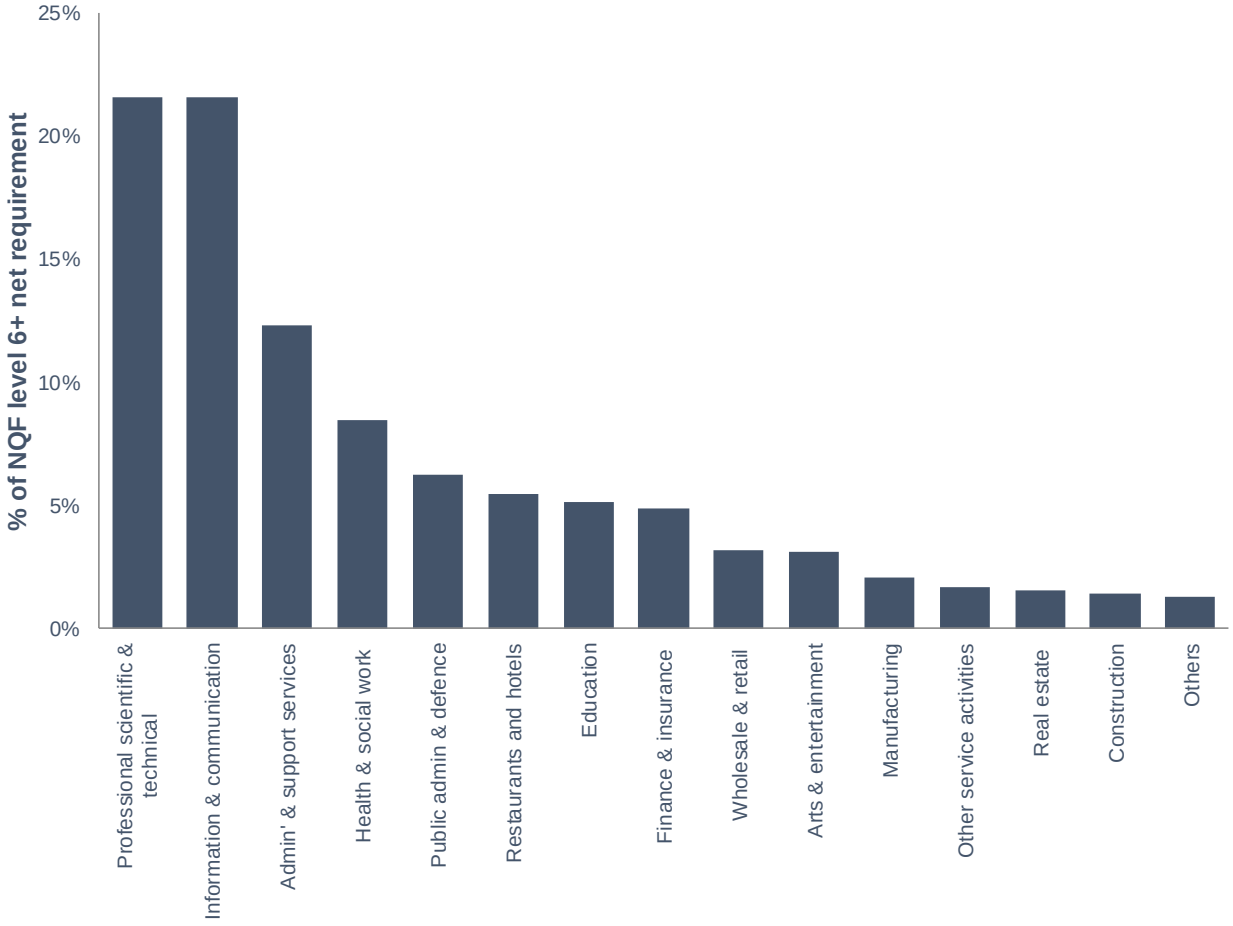
29. The profile of the net requirement is determined by graduate intensity alongside the scale of the sector. For example, although the graduate intensity in administration and support services is relatively low, only two sectors demand a higher number of graduates owing to its relatively large share of employment within the BCC workplace.

30. The two largest sectors comprising the NQF level 6+ demand in BCC are the professional, scientific and technical (22% of the NQF level 6+ net requirement) and information communication (22% of the NQF level 6+ net requirement) sectors.

31. The sub-sectors of public services (health – 8%; public administration – 6%; and education – 5%) make up 20% of the NQF level 6+ net requirement in the BCC workplace. This is an important point to note with regard to fiscal challenges and the

UK Government's policy of austerity[6]. In other words, **given BCC's relatively high share of jobs in the public sector compared to other LGD's, any contraction of public sector employment associated with austerity would have a disproportionately large effect on high-level skills demand in BCC.**

Figure 4.11: Average annual net requirement for NQF level 6+ skills in BCC, 1 digit SIC (2017-27)



Source: UUEPC

32. At two digit SIC the largest sector demand for NQF level 6+ skills is computer programming and related activities (19% of the total NQF level 6+ net requirement). The next largest sector with regard to the NQF level 6+ net requirement is the legal and accounting activities sector (8% of the total NQF level 6+ net requirement). The next largest sectors are the sub-sectors of public services previously discussed above.

[6] This analysis is based on current UK Government spending plans. However, this can change with a change of government.

Table 4.2: Average annual net requirement for NQF level 6+ skills in BCC, top 15 sectors, 2 digit SIC (2017-27)

2 digit SIC	% of NQF level 6+ net requirement
Computer programming and related	19.3%
Legal and accounting activities	7.9%
Human health activities	6.3%
Public administration and defence	6.2%
Education	5.3%
Employment activities	5.2%
Office admin and support	5.1%
Food and beverage service activities	4.6%
Other professional, scientific and technical	4.1%
Architectural and engineering activities	3.7%
Activities of head offices	2.9%
Activities auxiliary to financial services and insurance activities	2.7%
Residential care activities	2.1%
Financial service activities, except insurance and pension funding	2.0%
Sports activities and amusement and recreation activities	1.7%

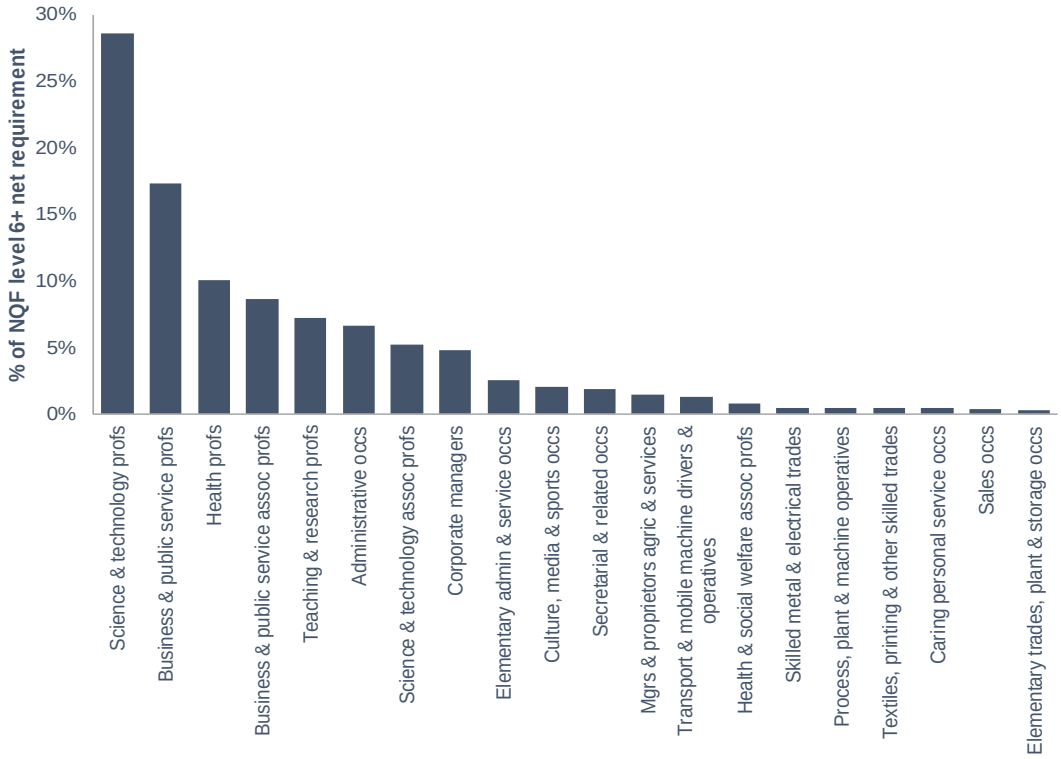
Source: UUEPC

Occupation profile of NQF level 6+ skills demand

33. The sector demand discussed above shapes the occupation demand for graduate skills in BCC's workplace.

34. The occupations accounting for the largest proportion of the NQF level 6+ net requirement are science and technology professionals (29%); business and public services professionals (17%); health professionals (10%); business and public services associate professionals (9%); and teaching and research professionals (7%).

Figure 4.12: Average annual net requirement for NQF level 6+ skills in BCC, 2 digit SOC (2017-27)



Source: UUEPC

35. Using more detailed three digit occupation categories the most in-demand occupations are: information technology and telecommunications professionals (22% of NQF level 6+ net requirement); business research and administrative professionals (8%); teaching and educational professionals (7%); nursing and midwifery professionals (6%); and sales, marketing and related associate professionals (5%).

Table 4.3: Average annual net requirement for NQF level 6+ skills in BCC, top 15 occupations, 3 digit SOC (2017-27)

3 digit SOC	% of NQF level 6+ net requirement
Information technology and telecommunications professionals	22.1%
Business, research and administrative professionals	7.6%
Teaching and educational professionals	7.2%
Nursing and midwifery professionals	5.8%
Sales, marketing and related associate professionals	5.2%
Architects, town planners and surveyors	3.8%
Administrative occupations: Finance	3.0%
Health professionals	3.0%
Information technology technicians	2.8%
Engineering professionals	2.8%
Legal professionals	2.6%
Natural and social science professionals	2.2%
Science, engineering and production technicians	1.9%
Secretarial and related occupations	1.8%
Business, finance and related associate professionals	1.6%

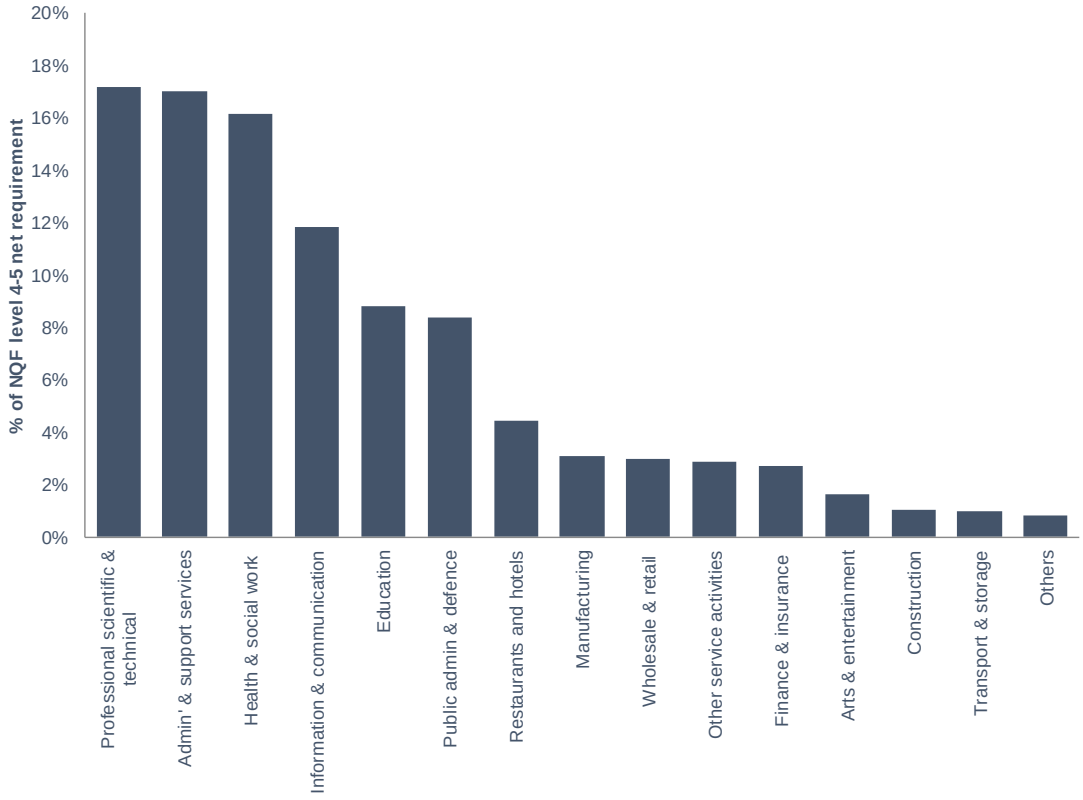
Source: UUEPC

Profile of NQF level 4-5 skills demand

Industry profile of NQF level 4-5 skills demand

36. The industry mix for mid-level skills is slightly different. The sectors accounting for the most NQF level 4-5 demand are: professional scientific and technical (17%); administration and support services (17%); health and social work (16%); information and communication (12%); and education (9%).

Figure 4.13: Average annual net requirement for NQF level 4-5 skills in BCC, 1 digit SIC (2017-27)



Source: UUEPC

37. Using more detailed two digit industry classifications the largest demand for NQF level 4-5 qualifications comes from human health activities (11%); legal and accounting activities (10%); education (9%); public administration and defence (8%); and office administration and support (8%). It is clear that within the BCC workplace the demand for sub-degree tertiary level qualifications is concentrated in the service sector.

Table 4.4: Average annual net requirement for NQF level 4-5 skills in BCC, top 15 sectors, 2 digit SIC (2017-27)

2 digit SIC	% of NQF level 4-5 net requirement
Human health activities	11.1%
Legal and accounting activities	10.0%
Education	8.8%
Computer programming and related	8.5%
Public administration and defence	8.4%
Office admin and support	7.5%
Employment activities	7.5%
Residential care activities	4.4%
Other professional, scientific and technical	2.9%
Food and beverage service activities	2.6%
Repair of computers	2.4%
Wholesale trade	2.2%
Accommodation	1.8%
Manufacture of other transport equipment	1.8%
Financial service activities, except insurance and pension funding	1.6%

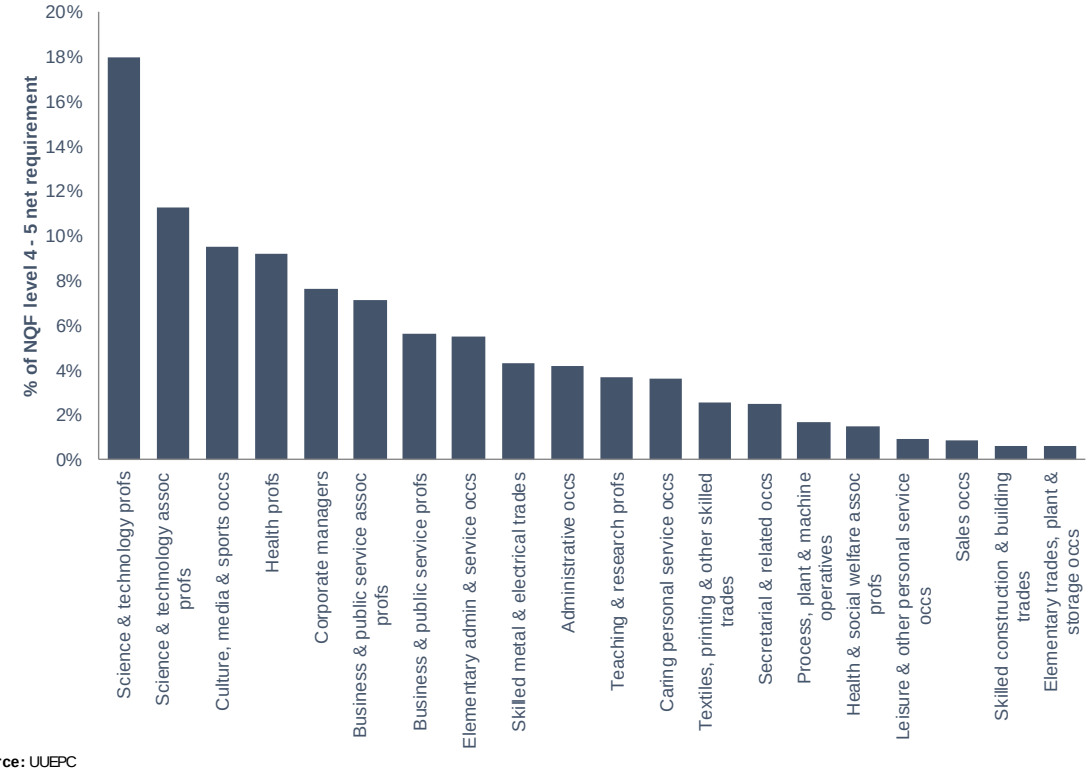
Source: UUEPC

Occupation profile of NQF level 4-5 skills demand

38. The sectoral demand discussed below shapes the occupation demand for mid-level skills in BCC's workplace.

39. The occupations accounting for the largest proportion of the NQF level 4 – 5 net requirement are science and technology professionals (18%); science and technology associate professionals (11%); culture, media and sport occupations (9%); health professionals (9%); and corporate managers (8%).

Figure 4.14: Average annual net requirement for NQF level 4 - 5 skills in BCC, 2 digit SOC (2017-27)



Source: UUEPC

40. More detailed analysis using three digit occupation categories highlights the most in-demand occupations as: information technology and telecommunications professionals (14% % of NQF level 4 - 5 net requirement); information technology technicians (6%); artistic, literary and media occupations (6%); nursing and midwifery professionals (5%); and sales, marketing and related associate professionals (4%).

Table 4.5: Average annual net requirement for NQF level 4-5 skills in BCC, top 15 occupations, 3 digit SOC (2017-27)

3 digit SOC	% of NQF level 4-5 net requirement
Information technology and telecommunications professionals	13.9%
Information technology technicians	6.1%
Artistic, literary and media occupations	5.9%
Nursing and midwifery professionals	5.3%
Sales, marketing and related associate professionals	4.2%
Science, engineering and production technicians	4.1%
Teaching and educational professionals	3.7%
Caring personal services	3.3%
Other elementary services occupations	3.3%
Health professionals	2.8%
Secretarial and related occupations	2.5%
Business, research and administrative professionals	2.5%
Food preparation and hospitality trades	2.1%
Design occupations	2.0%
Administrative occupations: Finance	1.9%

Source: UUEPC

Profile of skills demand below NQF level 3

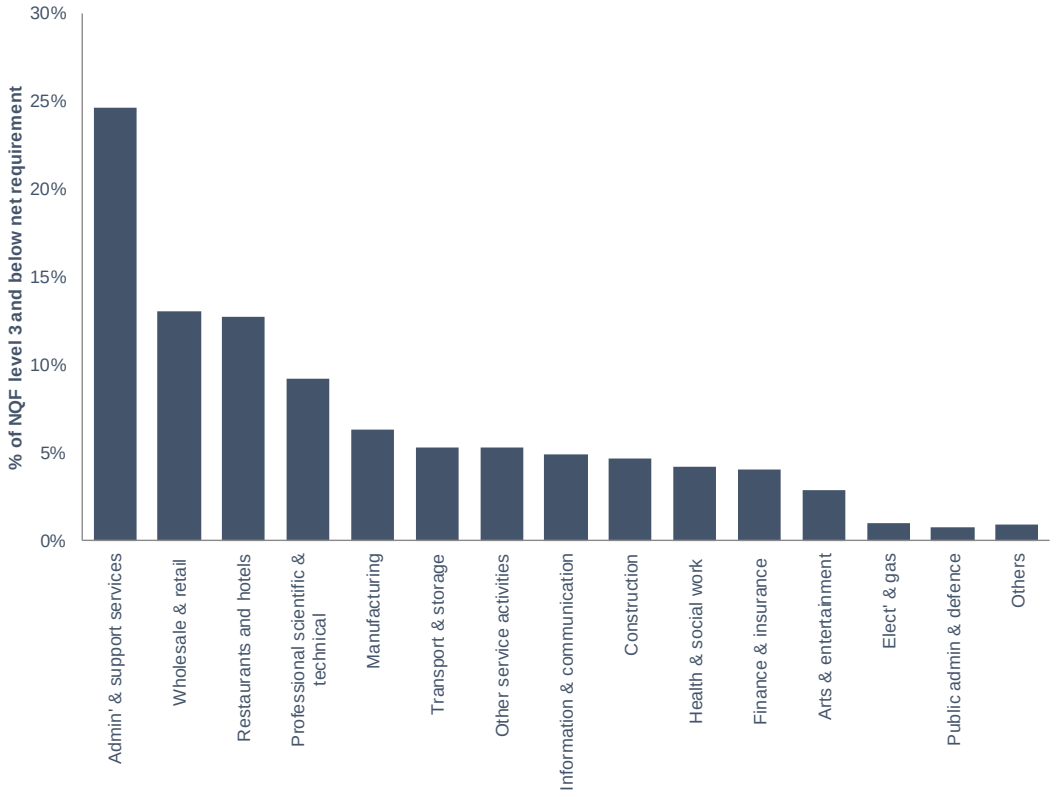
Industry profile of skills demand below NQF level 3

41. The sector mix making up the net requirement for NQF level 3 and below is very different from that of tertiary level qualifications demand.

42. The sectors accounting for the most demand below NQF level 3 are: administration and support services (25%); wholesale and retail (13%); restaurants and hotels (13%); professional, scientific and technical (9%); and manufacturing (6%).

43. It is important to recognise the important role that these key sectors play in the local economy. **Due to their high graduate content many of the high growth sectors in the local economy provide very few job opportunities for people with non-tertiary skills**. If BCC is to achieve inclusive growth it is important that there are a mix of sectors to provide job opportunities for individuals at all points on the skills spectrum.

Figure 4.15: Average annual net requirement for NQF level 3 and below skills in BCC, 1 digit SIC (2017-27)



Source: UUEPC

44. Using more detailed 2 digit sector classifications the sectors accounting for the highest proportion of the NQF level 3 and below net requirement are: office administration and support (13%); food and beverage service activities (10%); retail trade (7%); employment activities (5%); and wholesale trade (4%).

Table 4.6: Average annual net requirement for NQF level 3 and below skills in BCC, top 15 occupations, 2 digit SIC (2017-27)

2 digit SIC	% of NQF level 3 and below net requirement
Office admin and support	13.2%
Food and beverage service activities	10.5%
Retail trade	6.8%
Employment activities	5.3%
Wholesale trade	4.2%
Legal and accounting activities	3.4%
Security and investigation activities	3.3%
Specialised construction activities	3.3%
Other personal service activities	2.7%
Motion picture, video and television	2.7%
Architectural and engineering activities	2.6%
Land transport and transport via pipelines	2.5%
Warehousing and support activities for transportation	2.5%
Residential care activities	2.3%
Services to buildings and landscape activities	2.2%

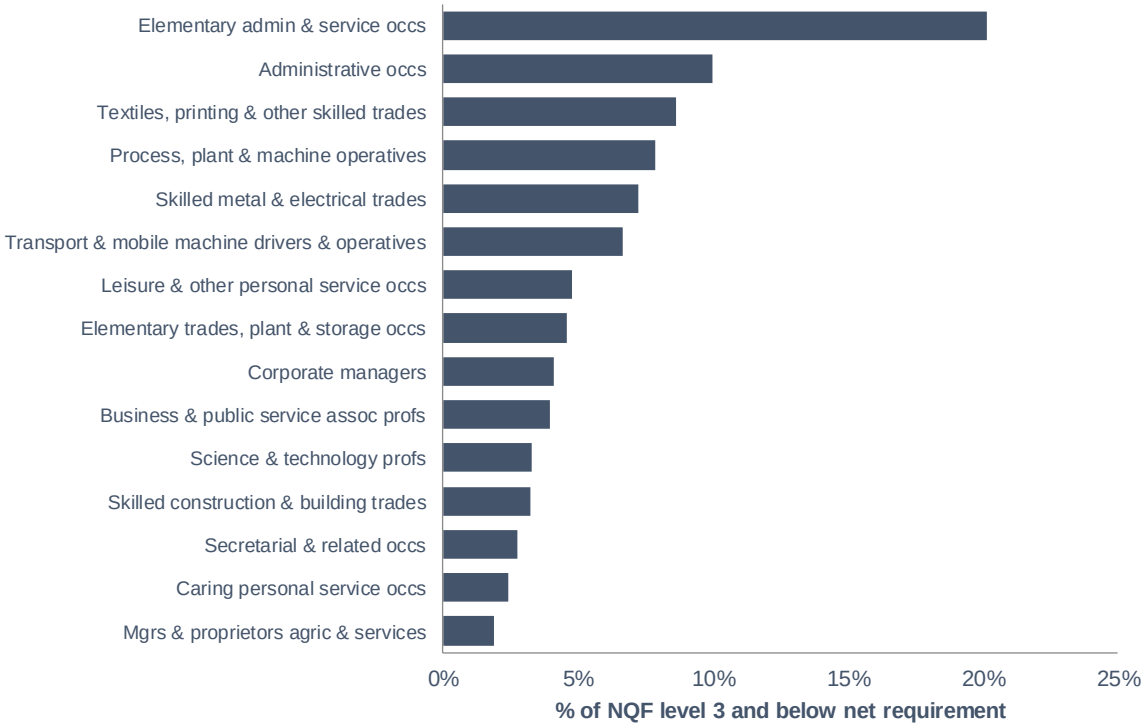
Source: UUEPC

Occupation profile of NQF level 3 and below skills demand

45. The occupations demanding skills at NQF level 3 and below are those which are most prevalent within the high demand sectors for low level qualifications.

46. The occupations accounting for the most NQF level 3 and below demand are: elementary administration and services (20%); administration (10%); textiles, printing and other skilled trades (9%); process, plant and machine operatives (8%); and skilled metal and electrical trades (7%).

Figure 4.16: Average annual net requirement for NQF level 3 and below skills in BCC, 2 digit SOC (2017-27)



Source: UUEPC

47. Using more detailed 3 digit occupation categories the occupation accounting for the largest NQF level 3 and below demand are: other elementary occupations (12%); food preparation and hospitality trades (7%); road transport drivers (5%); administrative occupations: finance (4%); elementary process and plant occupations (3%).

Table 4.7: Average annual net requirement for NQF level 3 and below skills in BCC, top 15 sectors, 3 digit SOC (2017-27)

3 digit SOC	% of NQF level 3 and below net requirement
Other elementary services occupations	12.0%
Food preparation and hospitality trades	6.9%
Road transport drivers	4.6%
Administrative occupations: Finance	4.5%
Elementary process plant occupations	3.0%
Secretarial and related occupations	2.8%
Elementary storage occupations	2.7%
Elementary security occupations	2.7%
Information technology and telecommunications professionals	2.5%
Metal machining, fitting and instrument making trades	2.5%
Process operatives	2.5%
Elementary cleaning occupations	2.4%
Sales, marketing and related associate professionals	2.4%
Construction and building trades	2.3%
Caring personal services	2.2%

Source: UUEPC

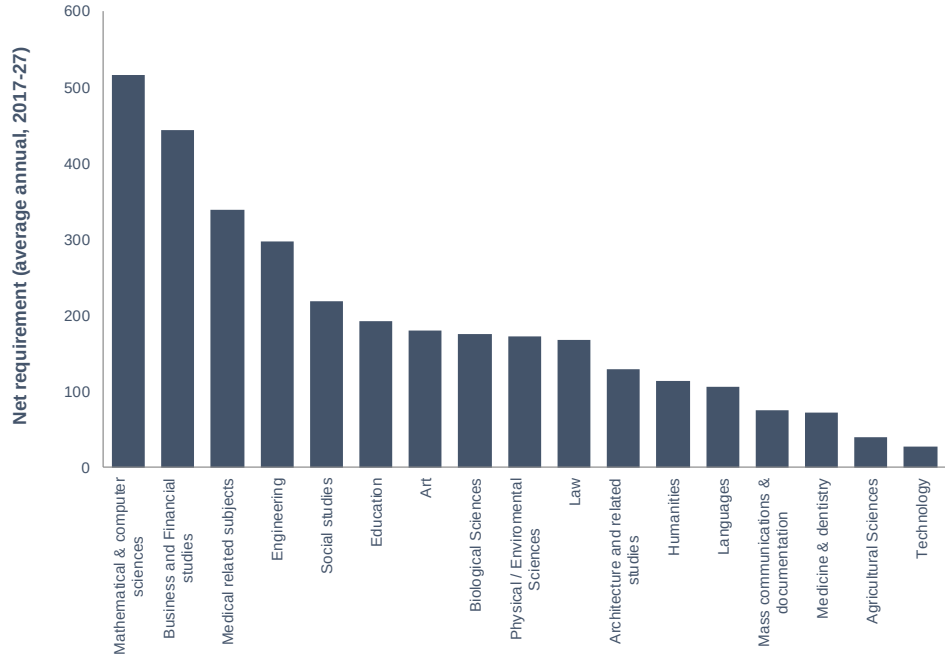
Subjects in demand

48. Using UUEPC's skills forecasting model it is possible to provide an indication of the subjects demanded in high skill occupations. These results should be interpreted as a rough guide, as at a sub-regional level the demand for skills can be altered by a new large employer (e.g. a new FDI firm) or an existing employer closing down or moving to another area. Estimates of future sector skills demand are based on historic patterns. It is possible that demand in some sectors may evolve over time to change the subject mix within sectors (e.g. growth of cyber-security etc.).

NQF level 6+ (undergraduate and above)

49. On average over the next decade the largest subject in demand for undergraduate degree programmes and above is mathematical and computer sciences at 520 persons per annum, representing 16% of the NQF level 6+ demand. This is highly correlated to high rates of expansion demand in the information and communication sector within the UUEPC high growth scenario.

Figure 4.17: Average annual net requirement for NQF level 6+ skills in BCC, 1 digit JACS (2017-27)

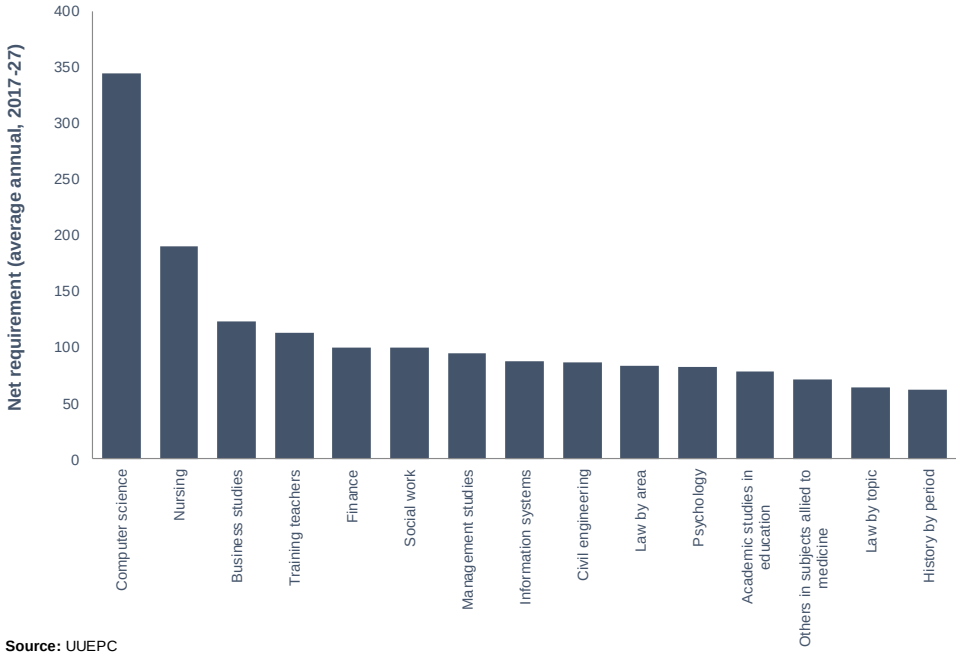


Source: UUEPC

50. The remaining structure of the demand for NQF level 6+ subjects is: business and administrative studies (14%); medical related subjects (10%); engineering (9%); social studies (7%); creative arts and design (5%); and others (33%).

51. On occasion headline subject information can be misleading due to broad groupings of subjects. For example, annual demand for maths and computing subjects is forecast to be 520 per annum over 2011-17. However, 67% of that demand is for computer scientists and 33% for mathematicians.

Figure 4.18: Average annual net requirement for NQF level 6+ skills in BCC, 2 digit JACS (2017-27)



Source: UUEPC

52. When ranked by finer subject classifications the top three subjects in demand are computer science (11% of the graduate net requirement); nursing (6%); and business studies (4%). Together these three subjects account for 20% of graduate demand in the BCC area.

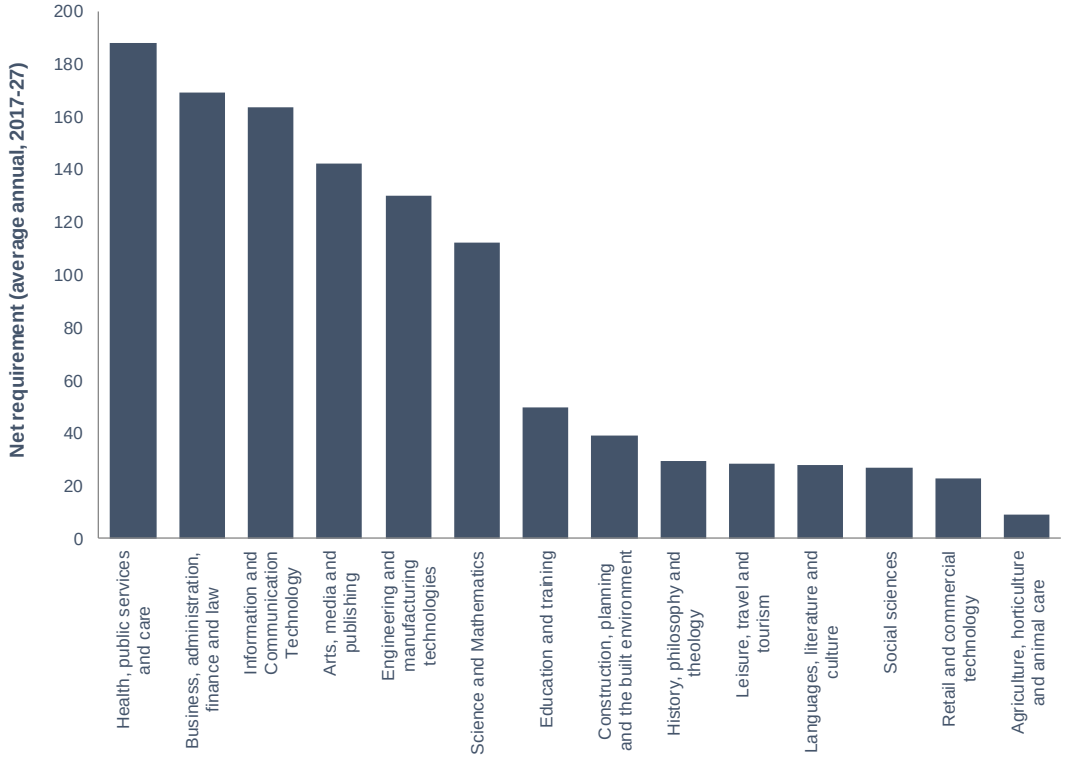
NQF level 4-5 (Sub-degree level)

53. NQF level 4-5 qualifications are sub-degree tertiary level qualifications. Examples of NQF 4-5 qualifications include Higher National Diploma's (HND's) and foundation degrees.

54. The figure overleaf summarises the subject profile of demand for NQF level 4-5 qualifications in the BCC area.

55. On average over the next decade the largest subject in demand for sub-degree programmes at NQF level 4-5 is health, public services and care at 190 persons per annum, representing 17% of the NQF level 4-5 demand. This is reflective of some expansion in health in the high growth scenario, alongside significant replacement demand driven by the health's high share of total employment in the BCC area.

Figure 4.19: Average annual net requirement for NQF level 4-5 skills in BCC, 1 digit SSA (2017-27)



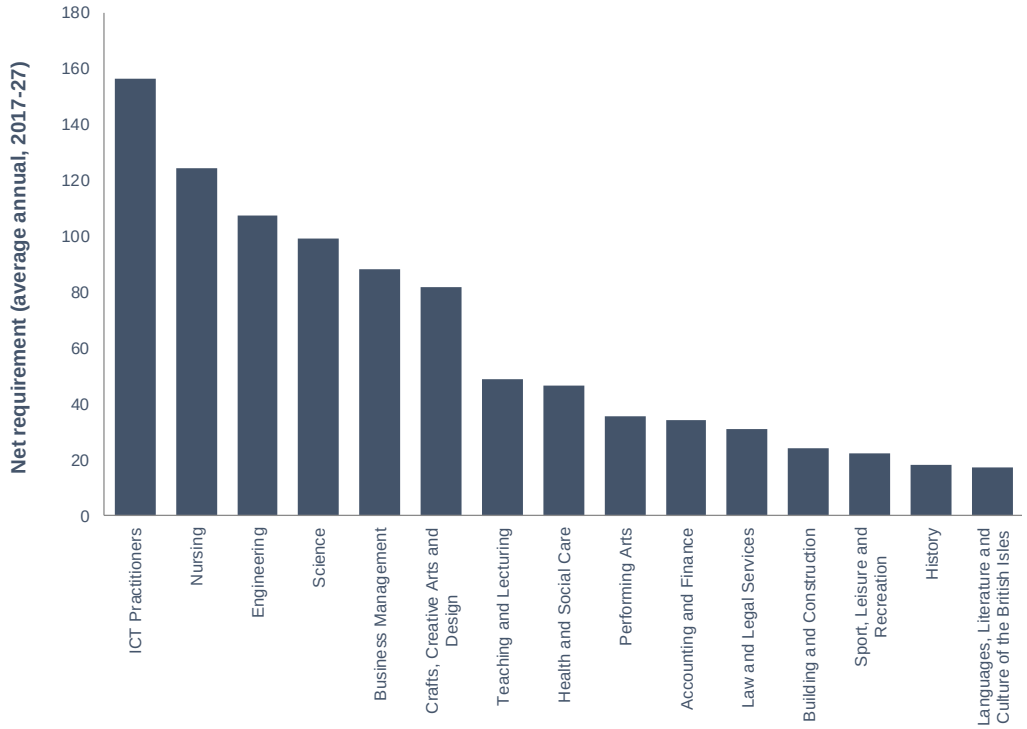
Source: UUEPC

56. The remaining structure of the demand for NQF level 4-5 subjects is: business, administration, finance and law (15%); information and communication technology (14%); art, media and publishing (12%); engineering and manufacturing technologies (11%); science and mathematics (10%); and others (21%).

57. At NQF level 4-5 the most in demand Sector Subject Area (SSA) using more detailed 3 digit classifications is ICT practitioners. This accounts for 14% of overall subject demand at NQF level 4-5.

58. The next largest demand for NQF level 4-5 subjects on a 3 digit SSA basis is: nursing and subjects and vocations allied to medicine (11%); engineering (9%); science (9%) and business management (8%).

Figure 4.20: Average annual net requirement for NQF level 4-5 skills in BCC, 2 digit SSA (2017-27)



Source: UUEPC

59. The most in-demand subjects are driven by a combination of expansion and replacement demand. High expansion demand in growth sectors such as ICT advanced manufacturing and creative industries has created demand for subject such as computing, engineering and design. However, staple employers in the BCC area have also created subject demand via replacement demand (e.g. in subjects related to the health and education sectors).

Key points and policy remarks

Key points

60. There are a number of key points which have been highlighted in this chapter:

- Future skills demand will be significantly driven by replacement demand, which is projected to be 1.5 times the size of expansion demand.
- Replacement demand is a function of existing jobs. Therefore, it will be largest in sectors that are already large in scale such as administration and support services, public services, retail and hospitality.

- The profile of future skills demand is weighted towards degree level qualifications, with 36% of the net requirement being associated with at least an NQF level 6+ qualification.
- Professional services, ICT and associated occupations account for a high proportion of graduate demand.
- The most in-demand subjects are maths and computer sciences; business and financial studies; medical related subjects; and engineering.
- Only 10% of the net requirement is associated with qualifications below NQF level 2.
- Sectors which account for the highest proportion of skills demand below NQF level 3 are administration and support services; wholesale and retail; and hospitality.

Policy remarks

61. The above data has a number of implications for policy:

- The role of replacement demand is an important point to emphasise with regard to careers advice. The labour market will create a plentiful supply of job opportunities even during periods of low growth. Sectors which have a sufficient critical mass but are associated with low expansion demand will continue to create opportunities via replacement demand.
- With relatively a small number of opportunities for young people with low levels of qualifications, it emphasises the importance of minimising the number of people leaving the education system with qualifications below NQF level 2.
- The demand of skills can have implications on BCC's inclusive growth agenda. To ensure that all BCC residents can benefit from growth residents either need to participate in an upskilling process, or the economy will need to generate a mix of opportunities available across the skills spectrum.

5. Supply side

Introduction

1. This chapter provides an overview of all publically available supply side information. This will include trends in school performance and higher and further education participation.

2. **All data presented in this chapter relates to the skills profile of BCC residents** (i.e. not workplace based and not based on the location of education institutions).

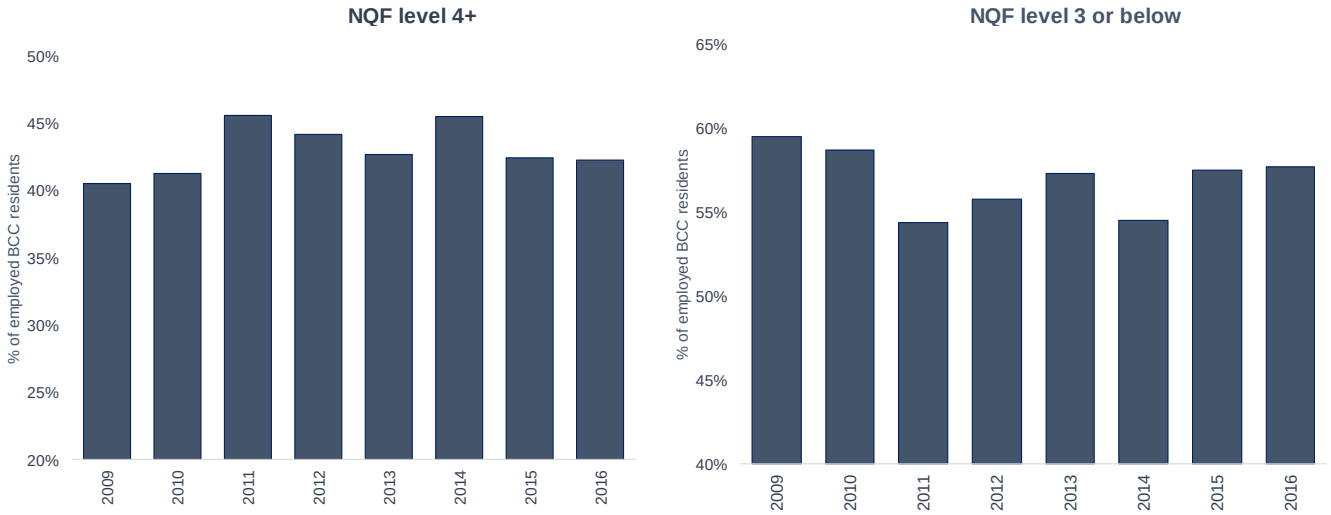
Trends in Belfast City Council's skills profile

Employed residents

3. Skills levels amongst employed BCC residents have improved over the last decade with the proportion of BCC residents with sub-degree, degree and postgraduate qualifications increasing from 40% to 42% between 2009-16 (Figure 5.1).

4. There has been a fall in the proportion of low skilled workers with a highest level of education below NQF level 3. This has fallen from 60% in 2009 to 58% in 2016.

Figure 5.1: Skill level of BCC employed residents (2009 – 2016)

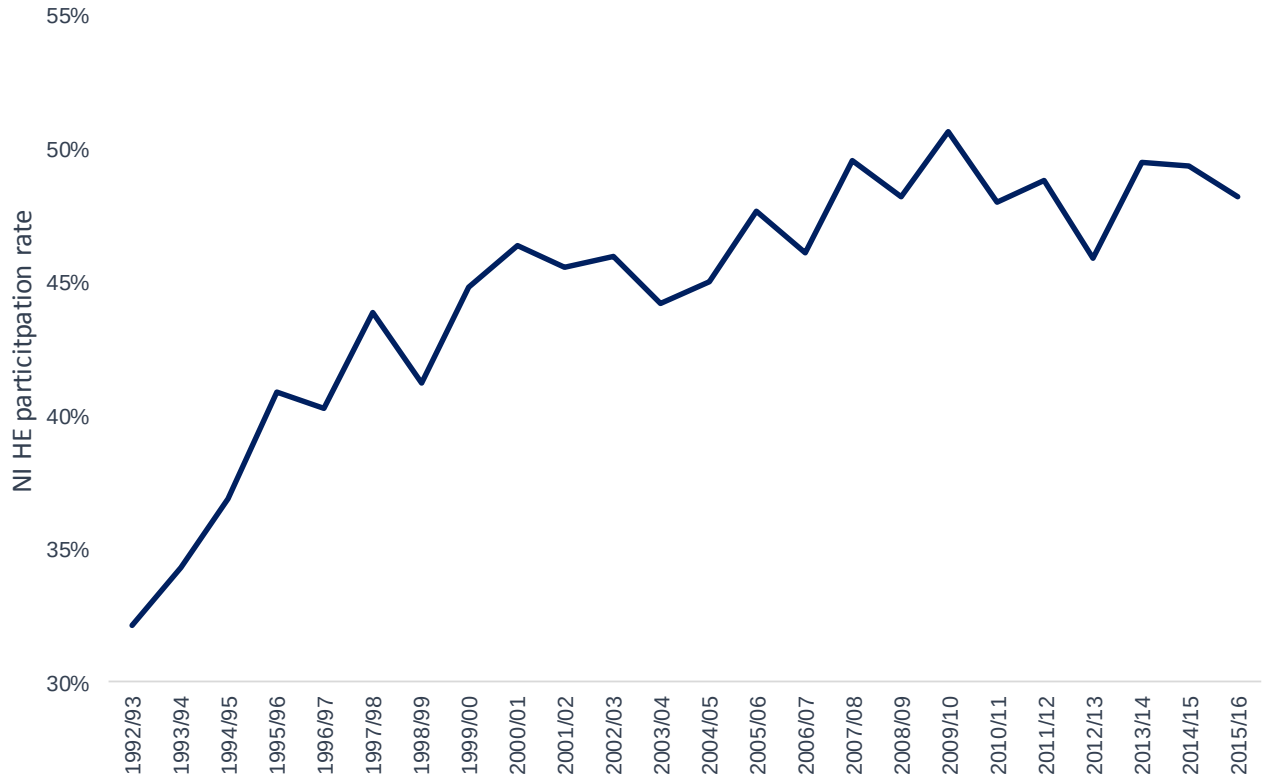


Source: LADB

5. Part of the change in the skills stock is attributable to a sectoral shift in the economy towards more skill intensive activities, both in the service sector and advanced manufacturing.

6. There is also a generational effect on the local skills profile. This involves older less qualified workers leaving the labour force to retirement. Alongside this, **widening access to Higher Education (HE) has led to an inflow of more highly qualified young people** with NI's HE participation index increasing from 32% to 48% between 1992/3 and 2015/16.

Figure 5.2: Northern Ireland Higher Education participation rate (1992/93-2015/16)



Source: DfE (Higher Education Statistics Agency (HESA), Further Education Statistical Record (FESR), Consolidated Data Return (CDR), Higher Education Authority - Republic of Ireland (HEA), Department for Education, Welsh Government (WG), Scottish Government (SG))
Note: Defined as the number of NI domiciled young entrants (aged under 21) to full-time undergraduate Higher Education (in the UK or Republic of Ireland) as a percentage of the 18 year-old population of Northern Ireland.

7. It is not possible to derive a skills structure by age using the Local Area Database (LADB). However, data from the 2011 Census provides some insight into the differences in qualifications across age bands. The widening access of HE has led to a diversified skill structure between age groups. For example, 40% of employed BCC residents aged under 50 have achieved a qualification greater than or equal to NQF level 4+ compared to 33% of residents over 50.

Table 5.1: NQF profile of employed residents in BCC, age breakdown (2011)

	Aged 16 to 34		Aged 35 to 49		Aged 50 and over	
	% of age group	p.p. difference (NI)	% of age group	p.p. difference (NI)	% of age group	p.p. difference (NI)
No qualifications	6%	0%	12%	0%	25%	-3%
Level 1 qualifications	10%	-1%	14%	-1%	10%	0%
Level 2 qualifications	16%	-3%	14%	-2%	12%	-1%
Level 3 qualifications	23%	1%	11%	-2%	9%	1%
Level 4+ qualifications	39%	5%	41%	6%	33%	5%
Other qualifications	6%	-2%	7%	-2%	11%	-2%

Source: Census 2011
Note: : Differences refer to BCC minus NI

8. The net effect of an outflow of less qualified older workers alongside an inflow of higher qualified young people is to drive up the stock of skills of employed BCC residents.

Table 5.2: NQF profile of employed residents in BCC, % of total people employed (2009 vs 2016)

	2009	2016	p.p. change
No qualifications	13%	9%	-4%
NQF Level 1-2	28%	30%	2%
NQF Level 3	18%	19%	1%
NQF Level 4+	40%	42%	2%

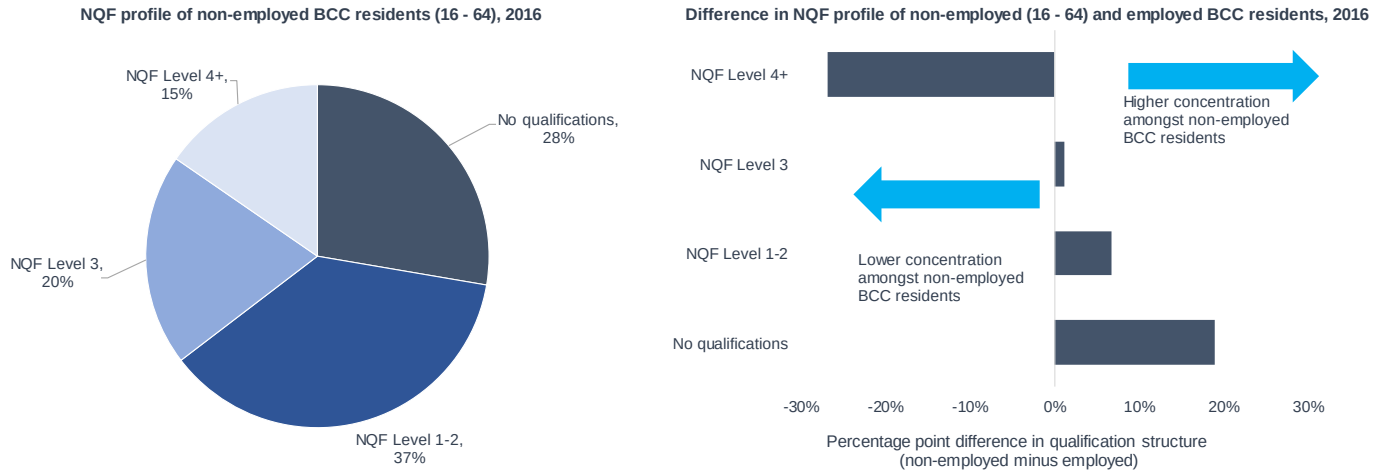
Source: LADB

9. The largest change is in relation to the proportion of the resident workforce with no qualifications, falling by a total of four percentage points since 2009. Subsequently, all other NQF levels have risen.

Non-employed residents (16-64 population)

10. Within the BCC labour market there are **considerable differences in the skills profile between the employed and non-employed population of working age**. Amongst those of working age who are out of work, only 15% have qualifications equal to NQF level 4 or above. This compares to 42% of BCC residents in employment.

Figure 5.3: Comparison of skills profile between non-employed and employed BCC residents (2016)



Source: LADB

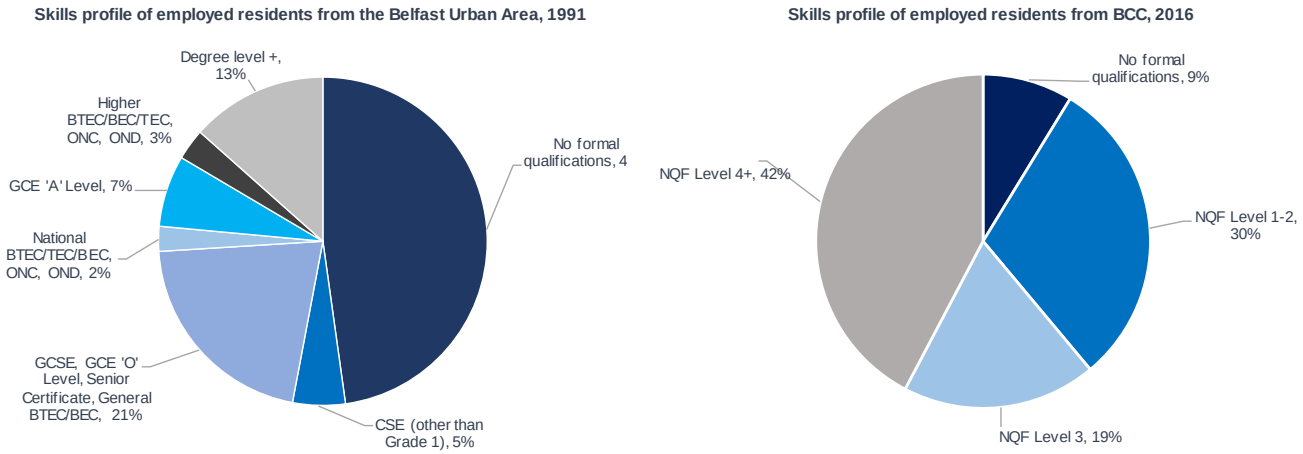
11. Conversely, only 9% of employed BCC residents have no qualifications, compared to 28% of out of work residents in BCC. Of employed residents in BCC 39% have a highest level of qualification below level 3. This compares to 65% out of work residents[7].

[7] In the LADB data for NQF levels 1 and 2 and grouped together due to small sample sizes.

Longer-term trends in BCC skills

12. Data from the Local Area Database (LADB) is not available pre-2009. However, Census data provides an illustrative picture of how BCC's skills profile has changed over the longer term.

Figure 5.4: Skills profile of employed BCC residents (2016 council & 1991 urban area)



Source: LADB & 1991 Census Belfast Urban Area Report
Notes: Figures are not directly comparable due to different categorisation of qualifications between 1991 & 2016. 1991 figures refer to 'Belfast Urban Area' which includes Belfast District Council (all wards), Lisburn District Council (selected wards), Newtownabbey District Council (selected wards), Carrickfergus District Council (selected wards) and North Down District Council (selected wards).

13. The data above demonstrates the **remarkable change in the skills profile of BCC's population within a generation**. It is important to note that a 16 year old entering the labour market in 1991 with low qualifications entered a labour market where almost half of people employed had no formal qualifications. The same individual could still be in today's labour market aged 43, and likely to have a highest level of qualification similar to that with which they entered in 1991. However, although they have a relatively low level of qualifications, with potentially 27 years of experience they are not unskilled.

Children and early years

Importance of the early years

14. **The importance of early childhood education and care has received increased recognition and policy attention over the past decade**. This has been driven by a growing evidence base, which demonstrates the positive impact of quality early experiences to children's cognitive, social and emotional development.

15. Empirical research has also demonstrated more long-term links between intervention in the early years and academic performance at post-primary level and beyond. This is particularly true when considering the differences between children from different socioeconomic backgrounds. For example, data from the Millennium Cohort Study

(MCS) highlighted cognitive gaps between disadvantaged and better off children as early as three and gaps in vocabulary at age five[8].

The home learning environment

16. There is evidence from neurology and child health that early intervention can be highly effective because the brain is more malleable at earlier ages, meaning that it can be influenced to a greater extent. A child's brain doubles in size in the first year and, by age three, it has reached around 80% of its adult volume[9].

17. Children from poor families can be up to a year behind their more advantaged peers educationally, even by the age of three[10]. Research has found that by this age, children from disadvantaged backgrounds may hear up to 30 million fewer words than children from higher socioeconomic status households. The majority of words used by three year old children have been derived from their parent's vocabularies. Therefore, children from disadvantaged backgrounds are at a greater risk of developing poor vocabulary and speech[11,12,13].

18. The implication is **that families can arguably have a greater impact on children's development than the school system and that this influence contributes to gaps between children before they start school**[14]. This has long been recognised by the research community, if not the policy world.

19. There are a number of features within the home learning environment which are important in determining the cognitive and non-cognitive skills of a child:

    - **Income:** Families with greater economic resources can potentially buy nutritionally superior food, live in well heated houses, purchase more educational toys and books, buy better quality childcare, provide access to private tuition and schooling.

    - **Level of education of parents:** Research suggests that higher educated parents provide more stimulation to their children by talking and reading with them more often. Longitudinal research undertaken in the US, UK, Australia and Canada estimates that parents with higher levels of educational attainment are 20-25% more likely to read to their children everyday than those with low levels of education attainment[15]. This contributes to children with more highly educated parents having more advanced cognitive skills and a wider vocabulary at an

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[8] Cassen, R., McNally, S.,& Vignoles (2015) Making a difference in education: What the evidence says.
[9] Rakic, P (2006) No more cortical neurons for you, *Science 313 (5789).*
[10] Feinstein, L. (2003) Inequality in the early years cognitive development in British Children in the 1970 cohort, *Economia.*
[11] Hart, B., and Risley, T. R. (1995), Meaningful differences in the everyday experience of young American children. Baltimore, P.H. Brookes.
[12] Jencks, C., and M. Phillips (1998), The black-white test score gap. Washington, D.C., Brookings Institution Press.
[13] Hart, B. and Risley, T.R. (2003), "The Early Catastrophe: The 30 Million Word Gap by Age 3", American Educator.
[14] Haveman, R. and Wolfe, B. (1995) The Determinants of Children's Attainments: Findings and Review of Methods. *Journal of Economic Literature*, 33, 1829-1878.
[15] Bradbury, B., et al (2015) Too many children left behind: The US achievement gap in comparative perspective. Russell Sage Foundation.

earlier age[16][17]. Parental education levels seem to play a stronger role compared to their incomes. This is because parents' levels of education are more directly linked to their ability to create quality home-learning environments[18].

- **Household employment status:** A study analysing the effect of parental employment in England found parental worklessness was negatively associated with the educational attainment of primary school children (age 7) and those at the end of secondary education (GCSE point scores at Key Stage 4)[19]. In particular, repeated worklessness was a significant risk factor associated with poorer academic attainment among children.

- **Poverty:** The MCS highlighted that 65% of children who experienced poverty persistently had a vocabulary level below the NI average at age five, compared to 38% of children who never experienced poverty. Poorer children who did well in their vocabulary test at age three (scoring in the top 40%) were almost twice as likely to fall out of the top 40% by age five than their better off peers (58% compared to 30%). Only one in four (25%) of children from the most disadvantaged backgrounds who scored in the bottom 40% at aged three had escaped the bottom three at aged 5. This compares to 61% of initially low achieving children from the least disadvantaged backgrounds. In the early years the poorest children are likely to regress, while the most advantaged children progress[20].

- **Household structure:** Providing sufficient home learning environments in the modern family structure is particularly challenging. There is a large body of research which highlights lower cognitive ability in young children in lone parent households compared to households where both parents live together[21]. Over the past few decades in most advanced countries there has been an increase in the number of single-parent families. In BCC 16% of households with children are single parent families (compared to 12% in NI). Childcare responsibilities can be a heavy on lone parents, particularly if they are responsible for childcare as well as earning a living for their family. Data from the Households Below Average Income (HBAI) survey highlights that over the past decade lone parents have had the highest levels of poverty in NI relative to other household types. The latest data indicates that 40% of lone parent households were in relative income poverty. Therefore, they are disproportionately affected by the factors associated

[16] Desforges C., with Abouchaar, A., (2003). The Impact of Parental Involvement, Parental Support and Family Education on Pupil Achievement and Adjustment: A Literature Review. DfES Research Report 433, 2003

[17] Clegg, J. and Ginsborg, J. (2006) *Language and Social Disadvantage*, Chicester: Wiley.

[18] Davis-Kean, P.E. (2005) The influence of parent education and family income child achievement. The indirect role of parental expectations and the home environment. Journal of Family Psychology, Vol 19/2, June 2005.

[19] Schoon I, Barnes M, Parsons S, Brown V, Ross A, Vignoles A. Intergenerational transmission of worklessness: Evidence from the Millennium Cohort and the Longitudinal Study of Young People in England: Department for Education. DFE-RR-234.

[20] Save the Children (2016) Ready to read: Closing the gap in early language skills so that every child in Northern Ireland can read well.

[21] Mariani, E. & Özcan, B. (2017) Family Trajectories and Well-being of Children Born to Lone Mothers in the UK. European Journal of Population. Volume 33, Issue 2.

with households in poverty which are known to have an adverse effect on childhood education.

- **Time investment:** If parents have to work more they are likely to spend less time with their children and there is some evidence that full-time work by mothers in the very early years of a child's life can be detrimental to their child's social development[22]. Longer periods of full-time employment by mothers when their children were aged one to five tend to reduce a child's chances of obtaining A-level (or equivalent) qualifications, and increase the child's risk of unemployment and economic inactivity in early adulthood[23].

20. **Poorer children are less likely to experience home environments featuring many of the positive influences on a child's education listed above**. This is important due to the persistence of the impacts whereby an educational gap has emerged in the early years of a child's life. A recent report by Save the Children[24] highlighted that a child in NI with weak language skills at the age of five is much less likely to be a strong reader by the age of eleven than a five year old with strong language skills. Children who had experienced poverty persistently scored 38% less on reading tests at age seven and 23% less on comprehension tests at age eleven than a child who never experienced poverty with above average language skills.

21. The home learning environment is at least as important as parent's socioeconomic status. Positive home-learning environments tend to be more likely in more affluent households. **The policy challenge is to help these vulnerable families build up more supportive environments despite the many economic and social difficulties they face**.

22. The earliest years of a child's life are critical with regard to their development. Therefore, families play arguably a more important role than the school a child attends or the teacher they have. **Young children at risk of low educational achievement who have not yet begun formal education should not be beyond the reach of public policy**. A child's education is not something that begins at school, and inequality is evident at an early stage. It should be acknowledged that intervention at the earliest point possible is needed to compensate for poor parenting and that investment should be sustained throughout a child's schooling.

Early childhood education and care services

23. Within a city such as Belfast, which is composed of areas of contrasting economic and social challenges, quality early years provision can have equity impacts. **Intervention at an early stage can mitigate some of the negative influences that occur prior to a child joining primary school**.

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[22] Gregg P, Washbrook E, Propper C, Burgess D. (2005) The effects of a mother's return to work decision on child development in the UK, Economic Journal, Vol: 115, Pages: F48-F80, ISSN: 0013-0133.

[23] Joseph Rountree Foundation (2001) The effect of parents' employment on outcomes for children.

[24] Save the Children (2016) Ready to Read: Closing the gap in early language skills so that every child in England can read well.

24. It is beyond the scope of this research to undertake a review of the quality of pre-school provision, or to assess longer-term impacts associated with existing provision within BCC. However, it would be remiss not to draw attention to the growing research base which emphasises the importance early years interventions has on long term skills development and ultimately labour market outcomes.

25. Within this report we concentrate on the number of funded pre-school places required in BCC over the next 12 years. The number of funded places provided in the BCC area in 2017/18 was 4,410, the lowest on record since the amalgamation of council areas in 2014.

Table 5.3: Funded pre-school enrolment by school type, by LGD (2017/18)

	Nursery schools/ classes in primary schools	Voluntary and private preschools	Reception classes in primary schools	Total funded pre-school
Antrim and Newtownabbey	1,250	460	20	1,730
Ards and North Down	970	740	10	1,720
Armagh City, Banbridge and Craigavon	1,970	790	20	2,780
Belfast	3,670	740	0	4,410
Causeway Coast and Glens	900	760	20	1,680
Derry City and Strabane	1,700	360	10	2,070
Fermanagh and Omagh	750	730	40	1,520
Lisburn and Castlereagh	180	530	0	710
Mid and East Antrim	950	610	0	1,560
Mid Ulster	320	1,180	0	1,500
Newry, Mourne and Down	1,270	1,070	50	2,390
NI	**15,360**	**7,950**	**190**	**23,500**

Source: Department for Education

Notes: NI total will not add to the sum of individual council areas. Specifically, figures for Voluntary and private preschools are not provided for Lisburn and Castlereagh or Mid-Ulster.

Demographic influences on future need for early childhood education and care services

26. **The birth rate in BCC is the 2nd lowest amongst NI LGD's**, and has been below the NI average every year for which data is available since 2008. This suggests the percentage increase in the number of children requiring access to early childhood education and care services will be relatively lower than other LGD's in NI.

Table 5.4: Birth rates & characteristics by LGD (2016)

	Birth rate per 1,000 female population aged 15-44 years	Births to Teenage Mothers (%)	Births to Unmarried Mothers (%)	Births to Single Parent Homes (%)
Antrim and Newtownabbey	0.63	3.4%	43.2%	22.9%
Ards and North Down	0.59	3.2%	39.6%	18.5%
Armagh City, Banbridge and Craigavon	0.72	2.7%	40.0%	19.8%
Belfast	0.62	5.3%	57.6%	41.1%
Causeway Coast and Glens	0.62	3.3%	47.2%	28.6%
Derry City and Strabane	0.66	3.4%	55.8%	44.3%
Fermanagh and Omagh	0.70	1.7%	30.3%	16.5%
Lisburn and Castlereagh	0.67	2.8%	34.7%	16.8%
Mid and East Antrim	0.63	3.6%	41.7%	23.8%
Mid Ulster	0.74	2.4%	31.1%	15.8%
Newry, Mourne and Down	0.73	2.1%	37.9%	22.3%
NI	**0.66**	**3.3%**	**43.5%**	**26.4%**

Sources: NISRA & ONS

Notes: Single parent home is calculated through the aggregation of joint registrations at different address and sole resistrations, divided by the total number of births.

27. BCC has the highest proportion of births to teenage mothers amongst NI LGD's at 5%, which compares to 3% for NI. Empirical literature in the UK suggests that weaker adult outcomes in the children born from a teenage mother with respect to education, labour market, inactivity, earnings, teenage childbearing, and health[25].

28. **Amongst NI LGD's BCC also has the highest proportion of births to unmarried mothers (58%) and the second highest proportion of registered to single parent homes** after Derry City and Strabane. In 2016, 41% of births in Belfast are registered to single parent homes which compares to 23% in the rest of NI (i.e. NI excluding Belfast).

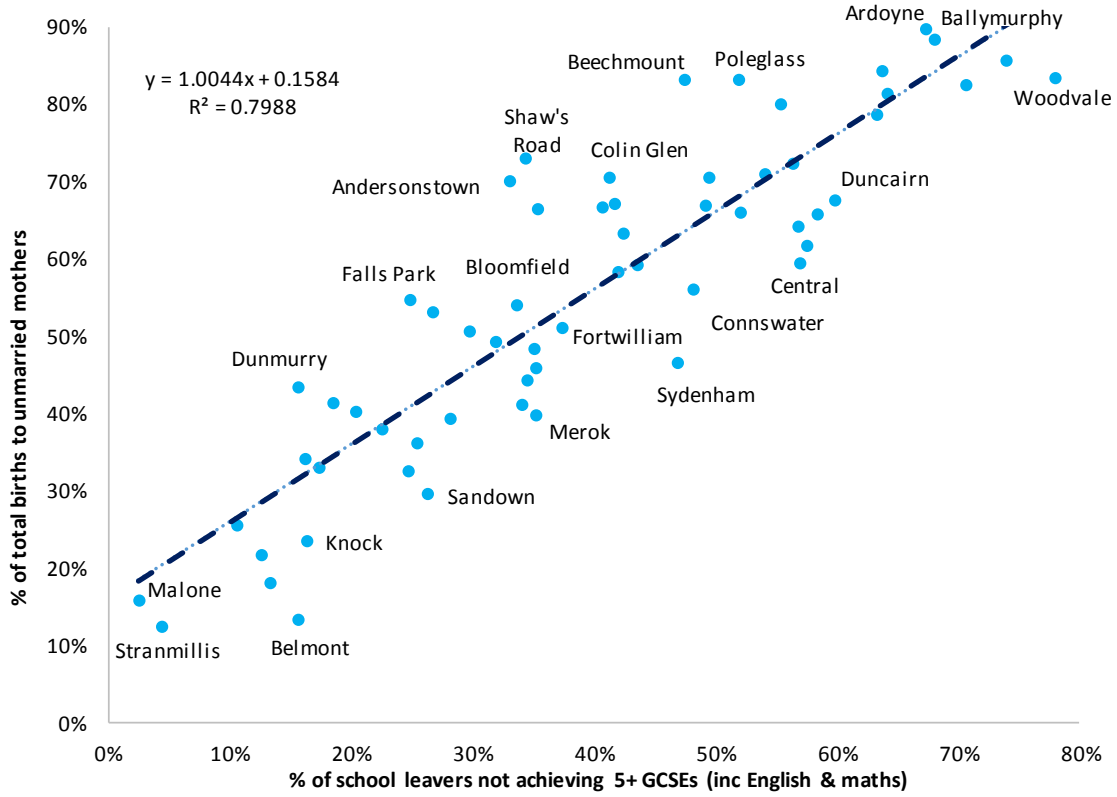
29. As mentioned earlier in this report, lone parents are the demographic group in society most at risk of experiencing poverty. They are often characterised by inextricable links to factors which negatively impact on a child's education performance in the early years (e.g. low income, low qualifications, time limitations etc.).

30. **BCC has a disproportionate number of wards with high proportions of births to unmarried mothers**. Overall BCC accounts for 13% of NI wards, yet makes up 35% of the top quartile of wards in NI with the highest proportion of births to unmarried mothers.

31. The figure overleaf illustrates the strong positive relationship between the proportion of births to unmarried mothers and the proportion of school leavers in the same wards who have failed to achieve at least 5 GCSE's including English and maths. Although unmarried mothers are different to single parent homes, the table above highlights that there is likely to be a significant degree of overlap between the two indicators. Therefore, unmarried mothers can be used as a rough proxy for single parent homes in the absence of data for the latter being available at ward level.

[25] Francesconi, M. (2008), "Adult Outcomes for Children of Teenage Mothers", Scandinavian Journal of Economics, 110, 93–117.

Figure 5.5: Births to unmarried mothers (2014/15) compared with school achievement levels, BCC wards (2013/14 – 15/16)



Source: NISRA, NI School Leavers Survey

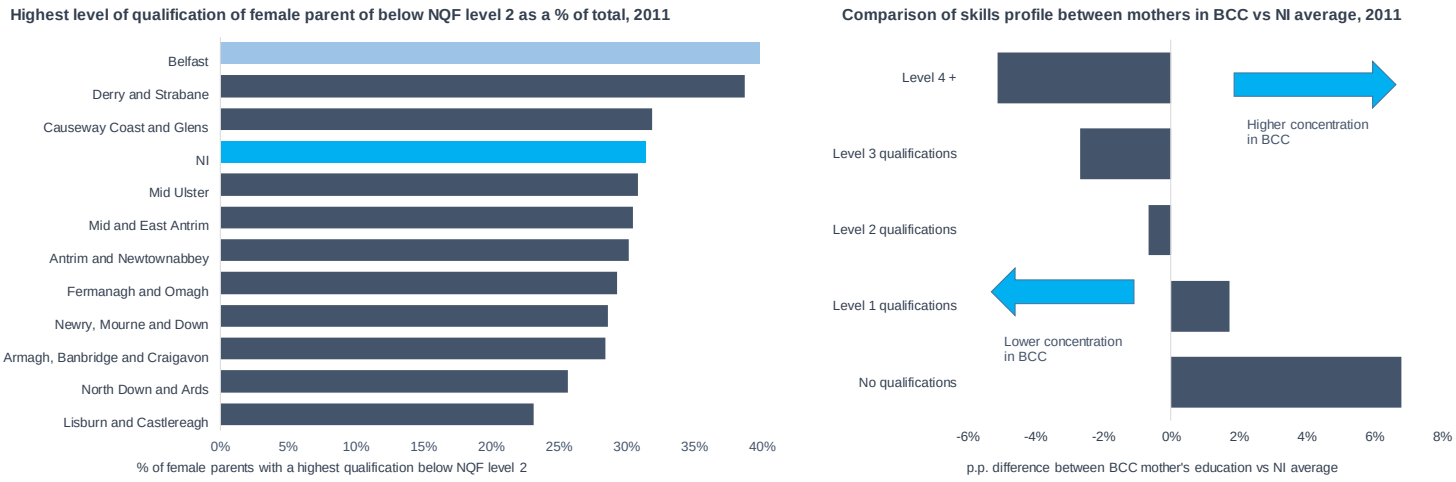
32. Wards across BCC are disparate in nature with regard to both education performance and the proportion of children born to unmarried mothers. The strength of the relationship between the two variables is enough to suggest that **household structure is an important influence on education performance and could be helpful in identifying children at risk of falling behind in their education journey**.

33. This information should be considered alongside the level of education of the parents of school children. This was discussed earlier in this chapter as a significant influence on the education performance of children. In particular, the mother's level of education plays a significant role in children's cognitive outcomes, even after taking account of other socioeconomic factors such as family income into account[26].

34. An analysis of the qualifications of mothers of seven year olds using data from the 2011 Census highlights **a higher proportion of mothers in BCC are low achievers compared to the NI average**. In BCC 40% of mothers of seven year old children had achieved a highest level of qualification below NQF level 2. This is the highest proportion of low achieving mothers amongst NI LGD's, and above the NI average (31%). With a higher proportion of low achieving mothers, this data suggests that there are a relatively high number of families with children who are at risk of underachievement and could benefit from early intervention programmes.

[26] Duncan, G.J. & Brooks-Gunn, J. (1997) Consequences of growing up poor. New York: Russell Sage Foundation.

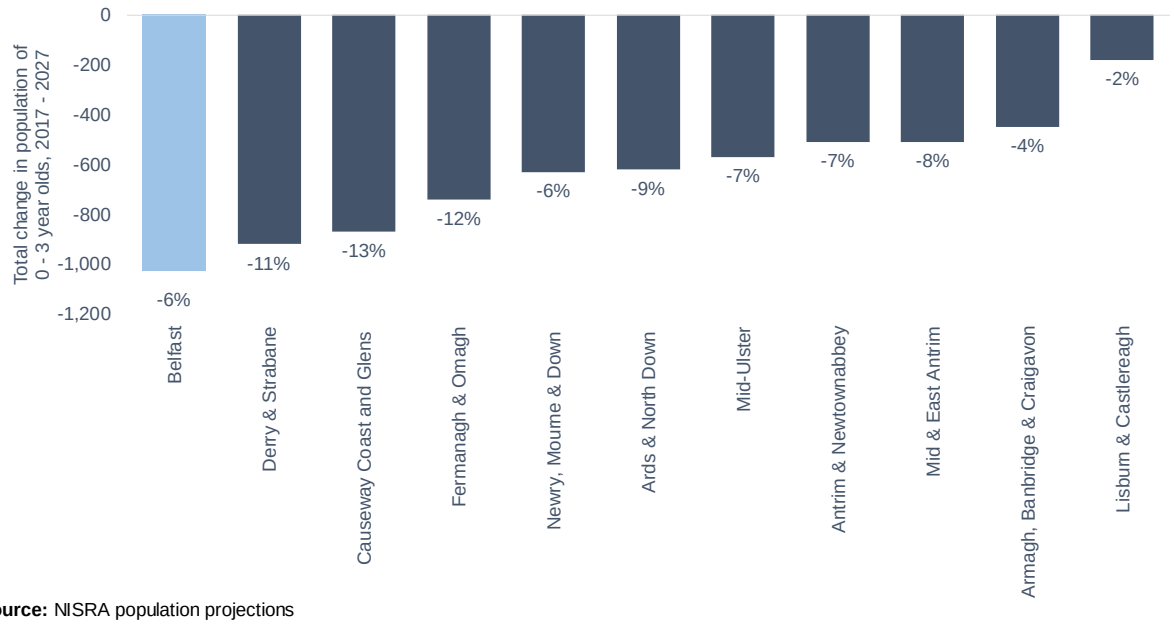
Figure 5.6: Skill profile of mothers of children aged 7, NI LGDs (2011)



Source: NI Census 2011
Note: Below NQF level 2 includes 'other' qualifications not included on the NQF framework, in addition to apprenticeships that are not defined by NQF level.

35. **Population projections from NISRA highlight that the number of children under 4 in BCC will decrease by 1,000 over the next decade**. In absolute terms this will be the largest decrease recorded amongst NI LGDs, but proportionately Belfast is declining at a slower rate (-6%). However, it is worth mentioning that NISRA's baseline population forecasts will not account for the additional economic activity associated with the Belfast Agenda. Therefore, if the objectives of the Belfast Agenda are achieved the decrease in the number of children is likely to be of a lower scale.

Figure 5.7: Change in population of children aged 0 – 3 years old, NI LGDs (2017 – 2027)



Source: NISRA population projections

36. The implication of having a smaller number of children is a smaller number of pre-school places required. The table overleaf provides an overview of the places required (assuming the distribution of pre-school type remains unchanged).

Table 5.5: Change in funded pre-school enrolment by school type, BCC (2017 – 2027)

School type	Required places (2027)	Net change (2017 - 2027)
Nursery schools/ classes in primary schools	3,460	-210
Voluntary and private preschools	700	-40
Reception classes in primary schools	0	0
Total funded pre-school	**4,160**	**-250**

Source: NISRA, DE and UUEPC

37. Nursery schools/ classes in primary schools account for the majority (83%) of pre-school enrolments in BCC. This is significantly higher than the NI average (65%) and subsequently, a lower proportion of Belfast children are enrolled in voluntary and private pre-schools - half that of the NI average (17% vs 34%). Given the declining population of 0–3 year olds it is forecast that there will be 250 less pre-school places required in BCC by 2027.

Primary education

38. Publically available data relating to the performance of primary school pupils is scarce in NI. One of the main datasets available to researchers is the results ay Key Stage 2 (KS2). Key Stage 2 results are used to measure the progress of primary school pupils in Years 5 – 7. Pupils are expected to achieve level 4 in KS2 assessments by the end of primary school.

39. Communication (reading, writing, talking and listening) is an important skill in the early years of a child's education. Those who fail to read properly by the end of primary school commonly have poor educational outcomes at age 16[27] and a lack of literacy skills holds back potential earnings in the labour market[28]. The proportion of children resident in BCC failing to reach level 4 proficiency in communication by the end of KS2 assessment was 28.2% in 2012, which was above the NI average (22.9%) and the highest proportion amongst NI LGD's. **A failure rate of more than one in four pupils in BCC for what is essentially basic reading, writing and communication skills is too high**.

[27] Cassen, R. & Kingdon, G. (2007) *Tackling low education achievement,* Report to the Joseph Rountree Foundation, York: Joseph Rountree Foundation.
[28] Hansen, K. & Vignoles, A. (2005) The United Kingdom in a comparative context. In S, Machin and A. Vignoles (Eds) What's the good of education? The economics of education in the United Kingdom, Princeton, NJ: Princeton University Press.

Table 5.6: Key Stage 2 Assessment Results, LGDs (2012)

	Communication in English			Using Maths		
	Pupils achieving level 4 or above (%)	% of wards in lowest performing quartile	% of wards in lowest performing quartile	Pupils achieving level 4 or above (%)	% of wards in lowest performing quartile	% of wards in lowest performing quartile
Antrim and Newtownabbey	78%	10%	7%	80%	9%	11%
Ards and North Down	77%	10%	9%	78%	7%	11%
Armagh City, Banbridge and Craigavon	77%	9%	9%	79%	9%	2%
Belfast	72%	23%	33%	74%	19%	30%
Causeway Coast and Glens	77%	9%	9%	78%	10%	9%
Derry City and Strabane	79%	6%	2%	79%	9%	7%
Fermanagh and Omagh	79%	9%	7%	81%	8%	4%
Lisburn and Castlereagh	78%	9%	7%	79%	8%	9%
Mid and East Antrim	77%	9%	9%	78%	12%	11%
Mid Ulster	79%	4%	9%	82%	6%	4%
Newry, Mourne and Down	81%	3%	2%	81%	4%	2%
Northern Ireland	**77%**	-	-	**79%**	-	-

Source: DE

40. In BCC more than one in four children fail to reach level 4 at KS2 (26.4%) in numeracy, compared to just over one in five (21.5%) in NI as a whole.

41. Although the majority of people have acquired an adequate level of numeracy skills by the time they complete formal education, there is a significant minority who have not. The results from the OECD Programme for the International Assessment of Adult Competencies (PIAAC) suggest that approximately one third of adults struggle to complete basic maths tasks (e.g. working out change from grocery shopping or applying a discount to the price of an item).

42. The PIAAC results indicate there are high proportions of the adult population with numeracy skills equivalent to that of a child who has successfully completed key stage 2 assessment. **From a policy perspective this not only indicates a need to upskill working age adults, but also to ensure that the flow of people with sub-optimal numeracy and literacy skills should be minimised from the earliest age possible**.

43. BCC has a disproportionate number of low achieving areas when the data is analysed at ward level. This illustrates there is a concentration of areas with high numbers of children who have fallen behind, or failed to catch up, by the end of primary education. BCC accounts for 33% and 30% of the wards in lowest performing decile in communication and numeracy respectively.

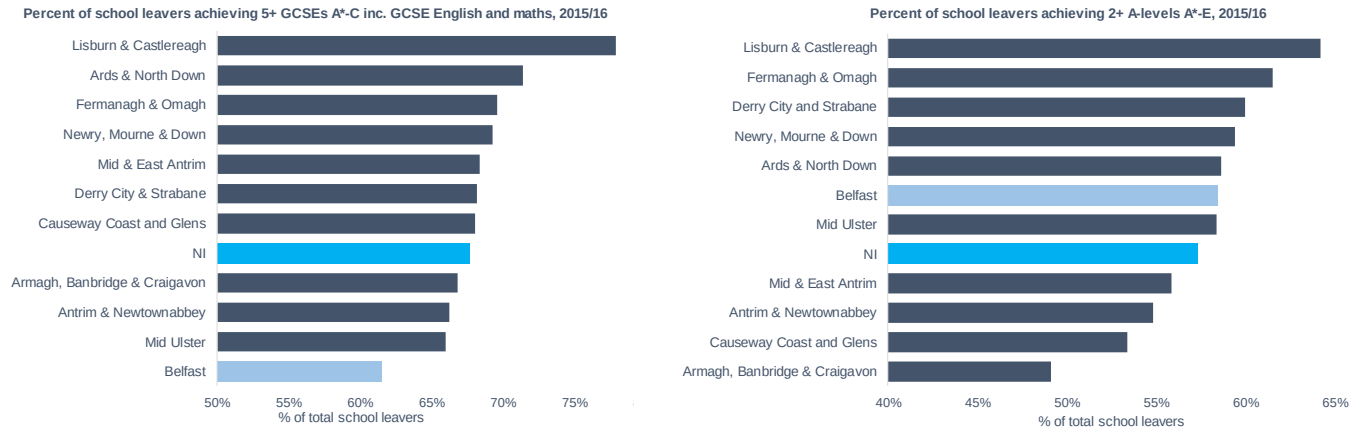
Post-primary school[29]

Recent performance

44. **BCC has the lowest proportion of school leavers who achieve 5 GCSE's including English and maths (61.5% compared to 67.7% in NI as a whole).** BCC performs slightly better than the NI average with regard to the proportion of school leavers achieve at least 2 A-levels or equivalent (58.5% compared to 57.3% in NI as a whole).

[29] All data relating to academic performance refers to children resident in Belfast.

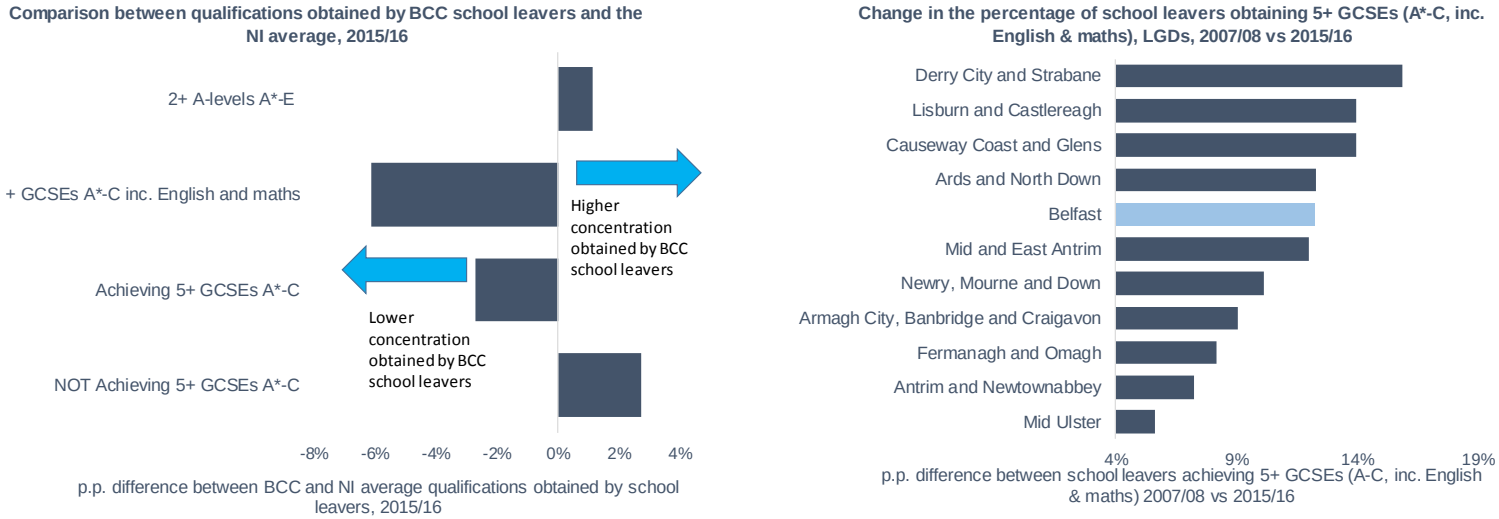
Figure 5.8: Post primary school performance, GCSEs & A-level attainment as a % of total school leavers, LGD (2015/16)



Source: NI School leavers survey

45. Although BCC has the lowest proportion of school leavers achieving at least 5 GCSE's including English and maths, **performance has improved in the past 8 years** for which data is available. In 2008, 49.3% of pupils left school achieving at least 5 GCSE's including English and maths. This represents an improvement of 12.2 percentage points, which ranks as the 5th best improvement recorded amongst NI's 11 LGD's. However, it is important to stress that this improvement may represent changes to assessment methods within the education system rather than an overall improvement in the ability of school leavers.

Figure 5.9: Qualifications obtained by BCC school leavers (2015/16) & relative LGD performance over time (2007/08-2015/16)

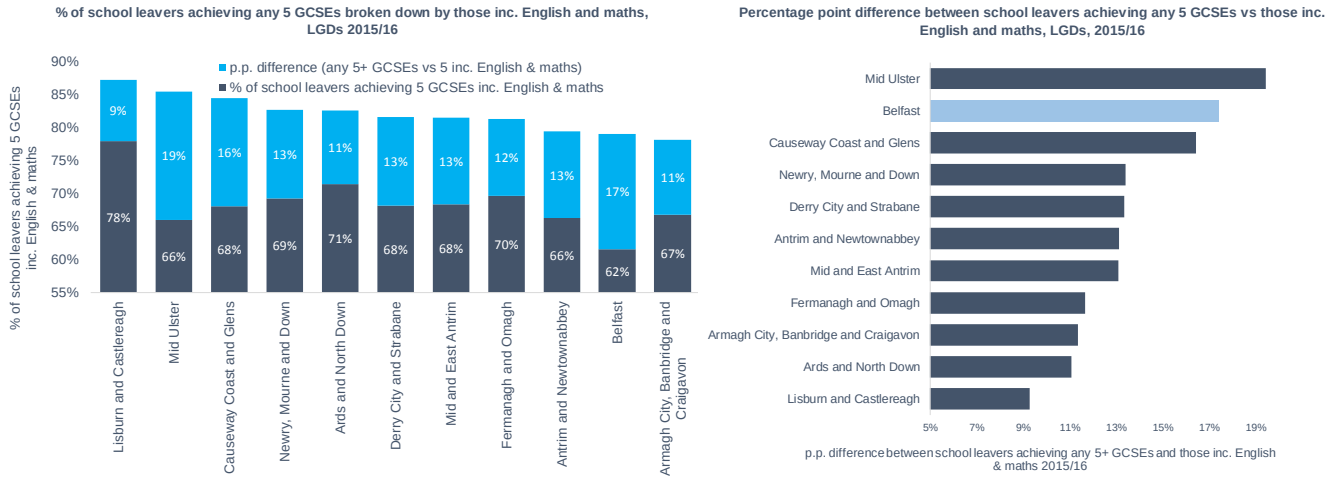


Source: NI School leavers survey

46. Within BCC there is a higher number of people leaving school with at least an NQF level 2 qualification (i.e. achieving 5 GCSE's A*-C in any subject) compared to achieving 5 GCSE's at grade A*-C including English and maths. BCC has the largest percentage point difference between these two categories of achievement after Causeway Coast and Glens (18% and 19% respectively). This suggests that, **compared to other LGD's, BCC has a relatively high proportion of school leavers who have not achieved a reasonable grade in the core subjects of English and maths**. This is an important point as this is often a requirement for

many jobs in the labour market, as well as a pre-condition for entry to many education and training courses.

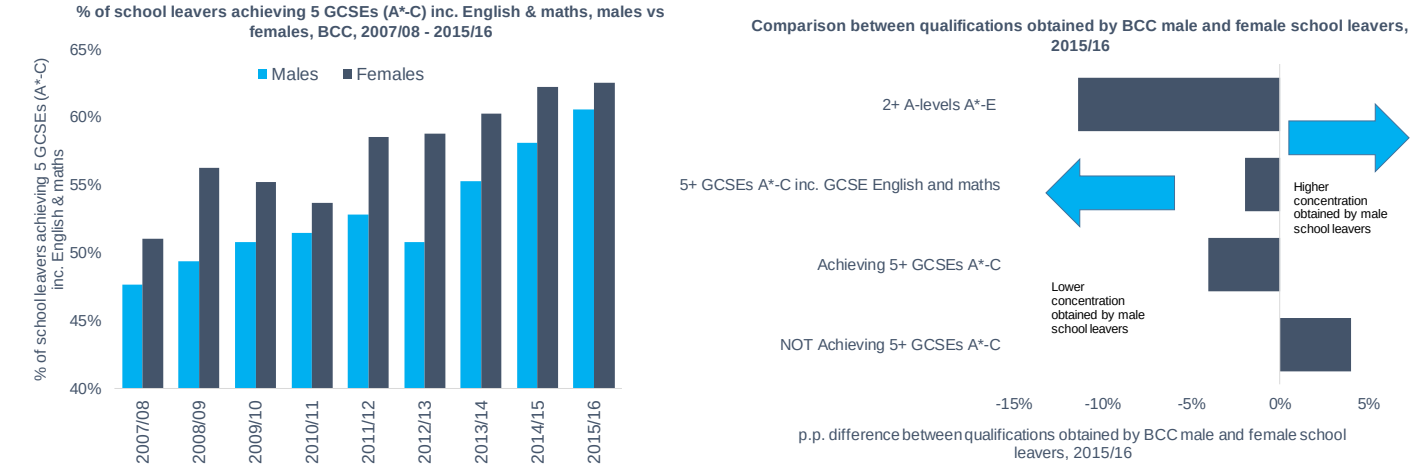
Figure 5.10: Comparison of school leavers who obtained any 5 GCSEs (A* - C) and those that include English and maths, LGDs (2015/16)



Source: NI School leavers survey

47. There are gender differences in the performance of school leavers within BCC. For example, a higher proportion of girls achieved at least 5 GCSE's including English and maths (62.5% compared to 60.6%). Equally, girls are more likely than boys to achieve at least two A-levels grades A*-E (64.1%compared to 52.8%).

Figure 5.11: Comparison of BCC male and female school leavers who obtained 5 GCSEs (A* - C) including English and maths (2015/16)



Source: NI School leavers survey

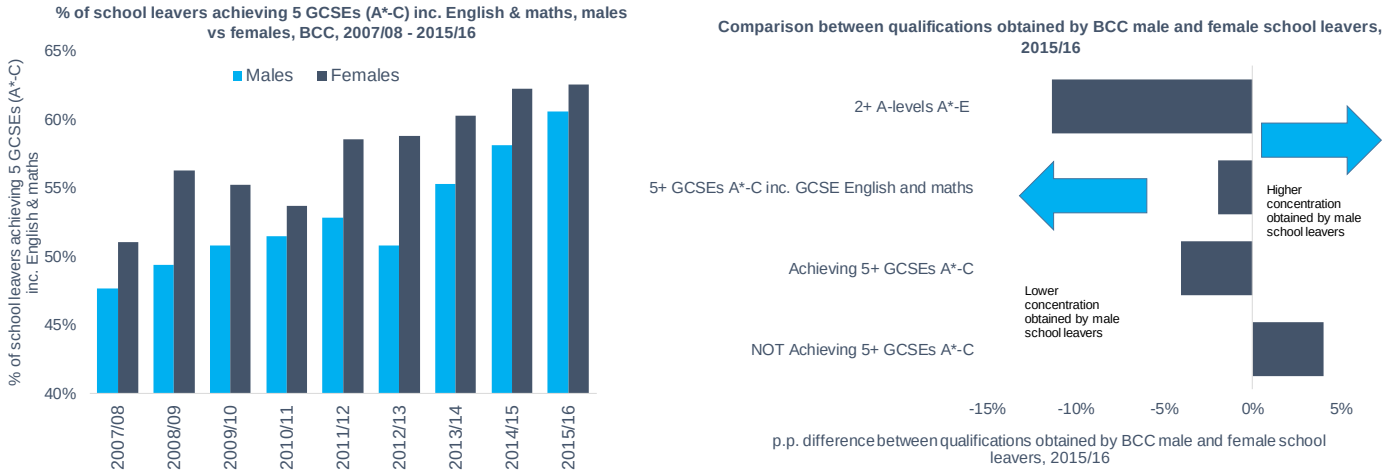
48. Larger differences are observed when considering the socioeconomic status of the families of school leavers. **Children who are entitled to Free School Meals (FSM) achieve a significantly lower level of academic achievement relative to their peers who are not entitled to FSM**. Only 26.2% of non-FSM pupils in BCC fail to achieve at least 5 GCSE's grade A*-C including English and maths, compared to 58.5% of FSM pupils.

49. It should be noted that **although the proportion of FSM pupils achieving at least 5 GCSE grade A*-C including English and maths has improved significantly**

over the past decade, the gap between FSM and non-FSM children has remained relatively unchanged[30].

50. Despite the improvement, less than half of disadvantaged pupils (41.5%) achieve a level of education that many employers consider to be the minimum standard of education expected from compulsory education. **A failure to address inequities amongst young people at an early age, and throughout their school journey, causes a long tail of underperformance at GCSE level which perpetuates in the form of worklessness and poverty concentrated in deprived communities in later years**.

Figure 5.12: Comparison of BCC school leavers that obtained 5 GCSEs (A* - C) including English and maths, FSME vs non FSME (2015/16)



Source: NI School leavers survey

51. Similarly, FSM pupils are much less likely than non-FSM pupils to achieve at least 2 A-levels grade A*-E (40.4% compared to 69.5%). This suggests much **lower rate of enrolment on tertiary level courses amongst more socioeconomically deprived children**.

52. The lowest levels of academic achievement, measured as failing to achieve at least 5 GCSE's grade A*-C including English and maths, are recorded amongst male FSM pupils (59.6%). This is slightly higher proportion of low achievers compared to female FSM pupils (57.3%) and a much higher proportion than their male non-FSM peers (26.2%).

Table 5.7: Qualifications obtained by BCC school leavers, comparisons using gender and free-school meal entitlement (FSME) (2015/16)

% of school leavers achieving	Male (2015/16)			Female (2015/16)		
	FSME	Non-FSME	p.p. difference	FSME	Non-FSME	p.p. difference
2+ A-levels A*-E	34%	65%	**-31%**	47%	74%	**-27%**
5+ GCSEs A*-C inc. GCSE English and maths	40%	73%	**-33%**	43%	74%	**-31%**
Achieving any 5+ GCSEs A*-C	64%	85%	**-21%**	71%	87%	**-16%**
NOT Achieving 5+ GCSEs A*-C	36%	15%	**21%**	29%	13%	**16%**

Source: NI School leavers survey

[30] It should also be noted that the number of pupils entitled to FSM has increased in recent years due to a change in eligibility criteria.

53. There are differences in the proportions of school leavers achieving 5 GCSE's grade A*-C including English and maths in excess of 30 percentage points between FSM and non-FSM pupils amongst both males and females. This is an extremely disappointing statistic and raises important questions of equity within the education system. This is not a Belfast specific phenomenon, and is a characteristic inherent across NI's education system. However, there is a higher proportion of FSM boys and FSM girls recording low levels of academic achievement in BCC compared to the NI average, and **the gaps between FSM and non FSM pupils of both genders is larger in BCC when compared to the NI average**.

54. An analysis of school performance using small area geographies highlights that education underachievement is highly concentrated in localised communities across BCC. For example, **BCC accounts for 13% of total wards in NI, yet accounts for 26% of all wards in the lowest performing quartile and 52% of wards in the lowest performing decile**. In other words, BCC has a disproportionately high number of neighbourhoods with a high proportion of low achievers after accounting for its relatively higher share of overall NI wards.

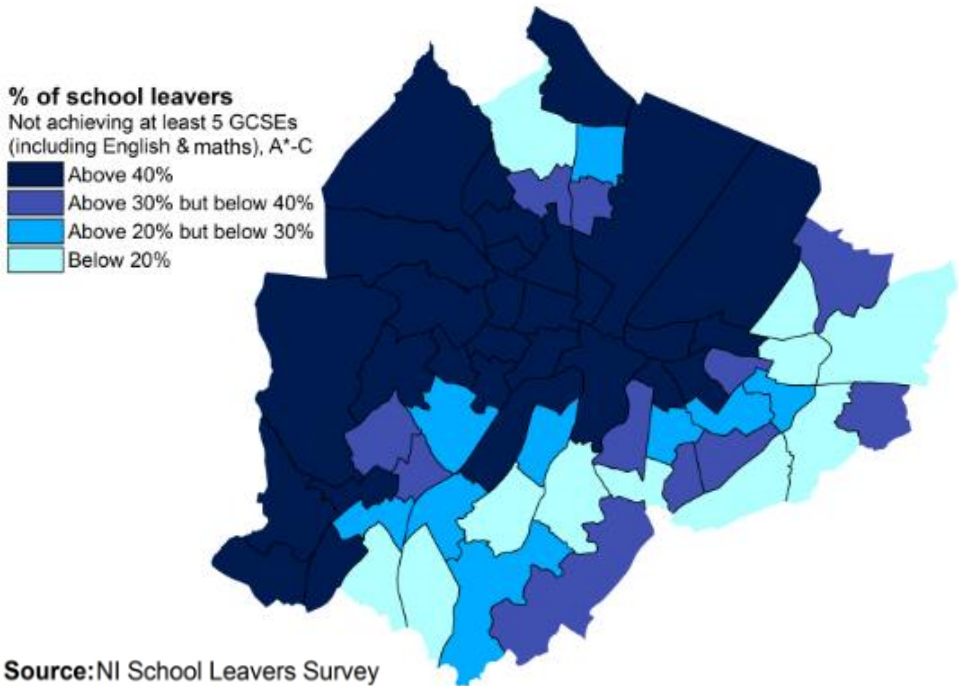
Table 5.8: Summary of ward level analysis of school performance, % of school leavers not achieving 5 GCSEs (A* - C) including English and maths (2015/16)

	% of total wards	% of wards in lowest achiveing quartile	% of wards in lowest achiveing decile	% of wards in Belfast City Region in lowest achieving Decile
Antrim and Newtownabbey	9%	12%	15%	19%
Ards and North Down	9%	8%	7%	8%
Armagh City, Banbridge and Craigavon	9%	7%	9%	-
Belfast	13%	24%	39%	50%
Causeway Coast and Glens	9%	7%	7%	-
Derry City and Strabane	9%	12%	4%	-
Fermanagh and Omagh	9%	3%	0%	-
Lisburn and Castlereagh	9%	4%	4%	6%
Mid and East Antrim	9%	7%	11%	14%
Mid Ulster	9%	9%	2%	-
Newry, Mourne and Down	9%	6%	2%	3%
Belfast City Region Total	56%	62%	78%	100%
Total	100%	100%	100%	-

Source: NI School leavers survey

55. Of the top ten lowest achieving wards in NI seven are located in BCC. The lowest achieving wards in BCC are Woodvale (78%), New Lodge (74%) and Shankill (71%). The highest achieving wards are Malone (2%), Stranmillis (4%) and Hillfoot (10%). The geographic spread of low achieving wards is skewed towards the west and north of BCC, although most inner city areas perform poorly.

Figure 5.13: Percent of school leavers in BCC wards not achieving 5 GCSEs (A*-C) including English and maths (2013/14 – 2015/16)



Lowest Achievers in BCC

	Ward	%
1	Woodvale	78%
2	New Lodge	74%
3	Shankill	71%
4	Ballymurphy	68%
5	Ardoyne	67%
6	Water Works	64%
7	Turf Lodge	64%
8	Falls	63%
9	Duncairn	60%
10	Blackstaff	58%

Highest Achievers in BCC

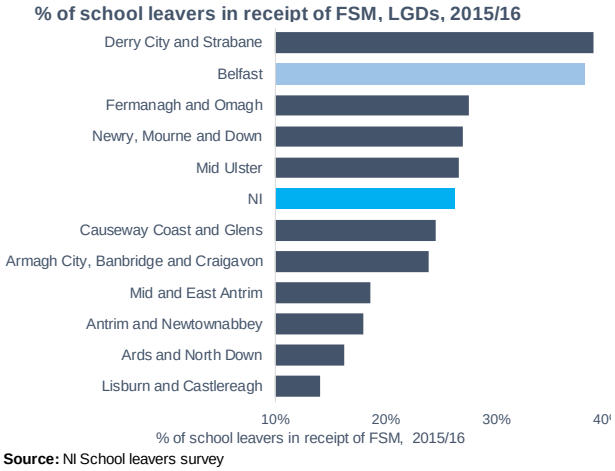
	Ward	%
1	Malone	2%
2	Stranmillis	4%
3	Hillfoot	10%
4	Rosetta	13%
5	Finaghy	13%
6	Belmont	16%
7	Dunmurry	16%
8	Cavehill	16%
9	Knock	16%
10	Stormont	17%

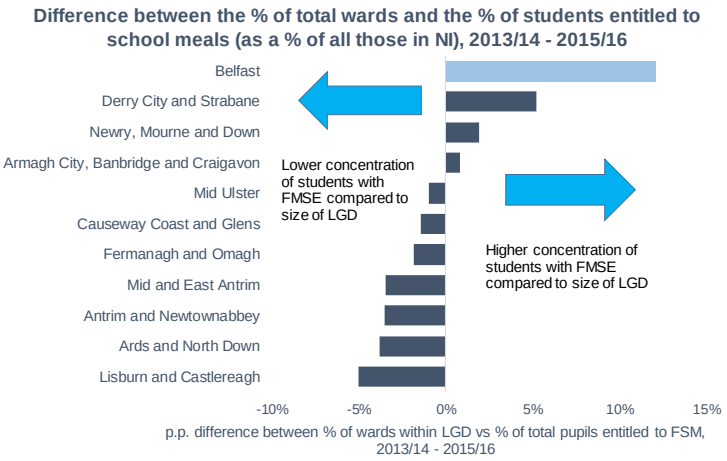
Note: Additional maps relating to education and skills are included in Annex D.

56. There is an apparent correlation between socioeconomic indicators highlighting high levels of deprivation, poverty and worklessness and low levels of education achievement at GCSE level. **This highlights equity issues with regard to educational outcomes, and suggests that there is not equality of opportunity for children of all socioeconomic backgrounds in NI.**

57. The chart overleaf highlights the strong association between disadvantaged pupils (defined by their entitlement to FSM's), and low levels of academic achievement at GCSE level. In 2015 BCC had the highest proportion of school leavers who were entitled to FSM amongst LGDs. **Almost two in five (38%) school leavers in BCC had FSM entitlement, compared to just over one in four (26%) in NI as a whole**.

Figure 5.14: Analysis of FSME by LGD (2015/16), and comparison between relative concentration of FSME to size of LGD (2013/14-2015/16)



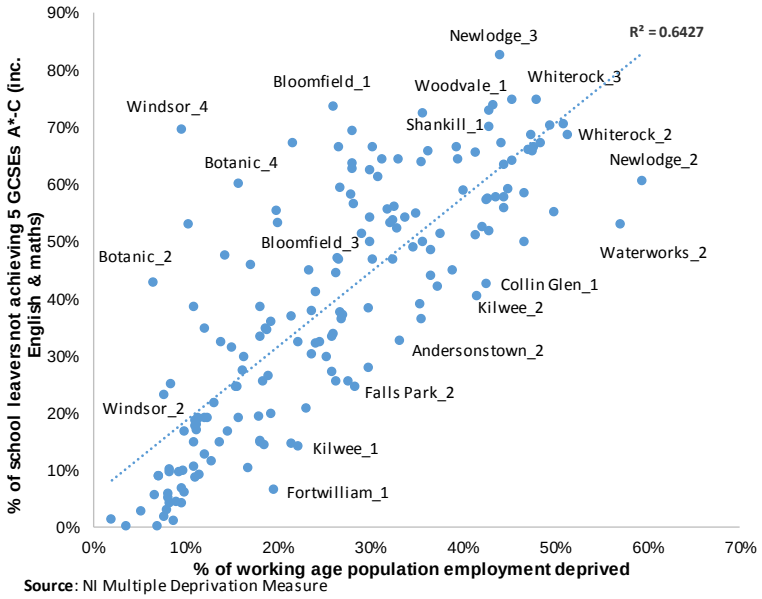


Source: NI School leavers survey

58. BCC also has a disproportionately high number of wards with the highest proportion of school children entitled to FSM. Of the 462 wards in NI 13% are in BCC, yet BCC accounts for 50% of the wards in the top decile with the highest proportion of children with FSM entitlement (26% within the top quartile). Additionally, **of all students entitled to FSM, one-quarter reside within BCC**. Given the high correlation between FSM entitlement and low achievement, this suggests a relatively high number of pupils within BCC who are at risk of low academic achievement.

59. Academic achievement in BCC also correlates with other economic variables related to deprivation. For example, the chart below highlights that there is a positive correlation between the Super Output Areas (SOA's) in BCC with employment deprivation. The data suggests **worklessness in local communities is a factor which holds back school achievement.**

Figure 5.15: Relationship between achieving 5 GCSEs (A* - C) including English and maths and employment deprivation, BCC SOAs (2015/16)



Source: NI Multiple Deprivation Measure

Note: *Employment deprived is defined as proportion of working age population who are in recipt of at least one employment related benefit, and individuals who are not in recipt of an employment related benefit, nor have received income from employment*

60. The patterns illustrated in the above chart holds at the NI level (see Annex C). This is an important point as BCC has a disproportionately high number of employment deprived SOA's. BCC accounts for 20% of SOA's in NI, yet accounts for 37% of the most employment deprived SOA's in the lowest performing quartile and 55% of SOA's in the lowest performing decile.

Table 5.9: Comparison between relative size of LGDs and the proportion of the working age population who are employment deprived (2015/16)

LGDs	% of total SOAs	% of SOAs in bottom quartile	% of SOAs in bottom decile
Antrim and Newtownabbey	8%	4%	1%
Ards and North Down	10%	4%	1%
Armagh City, Banbridge and Craigavon	10%	6%	4%
Belfast	20%	37%	55%
Causeway Coast and Glens	8%	8%	3%
Derry City and Strabane	8%	17%	27%
Fermanagh and Omagh	6%	5%	3%
Lisburn and Castlereagh	8%	1%	0%
Mid and East Antrim	7%	6%	1%
Mid Ulster	7%	2%	0%
Newry, Mourne and Down	9%	9%	3%

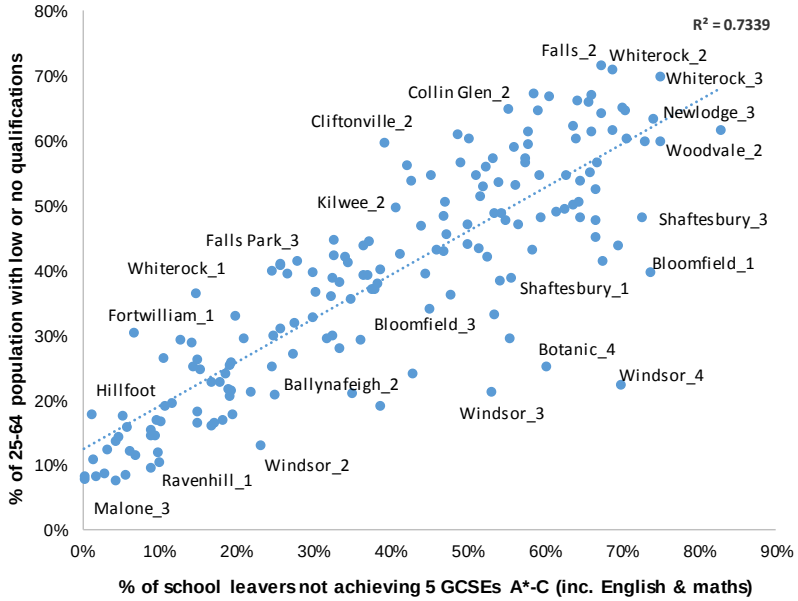
Source: NI Multiple Deprivation Measure

Note: Employment deprivation is measured as the proportion of working age population who are in receipt of at least one employment related benefit, and individuals who are not in receipt of the selected benefits, nor have received income from employment

61. In general, statistical relationships between education achievement and economic indicators are stronger using small geographic classifications. This suggests that **many of the challenges facing the NI education system are highly localised.**

62. As discussed earlier in this chapter, empirical research highlights that levels of parental education have a strong influence on children's level of academic achievement. The chart overleaf illustrates a significant association between the skills of the 25-64 year old population and academic performance. **The data suggests an intergenerational transfer of low skills whereby local communities in which the 25-64 year old population have a low level of qualification are also likely to be associated with poor academic performance.**

Figure 5.16: Relationship between not achieving 5 GCSEs (A* - C) including English and maths and population aged 25 – 64 with low or no qualifications, BCC SOAs (2015/16)

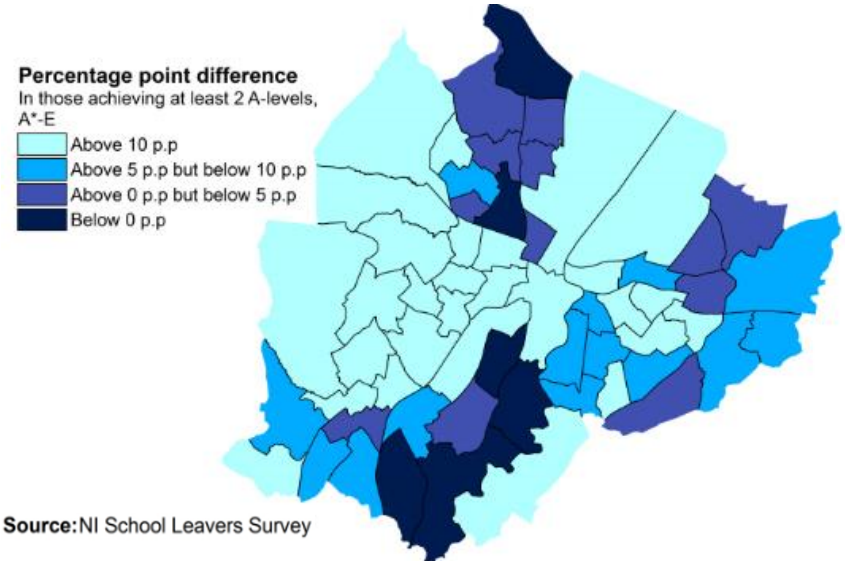


Source: NI Multiple Deprivation Measure

63. It is evident from the data that many of the areas propping up the bottom of the rankings with regard to low levels of achievement are the same areas that performed poorly 10 years earlier. Like many indicators of socioeconomic disadvantage, the lack of progress over long periods is often disappointing and suggests the current approach is not working.

64. However, there has been an improvement across most areas of BCC over the past decade. The proportion of school children who leave school with at least two A-levels A*-C has increased from 45% in 2007/08 to 58% in 2015/16.

Figure 5.17: Change in the proportion of school leavers who achieve at least two A-levels grade A*-C (2007-10 versus 2013-16)



Highest Improvement in BCC

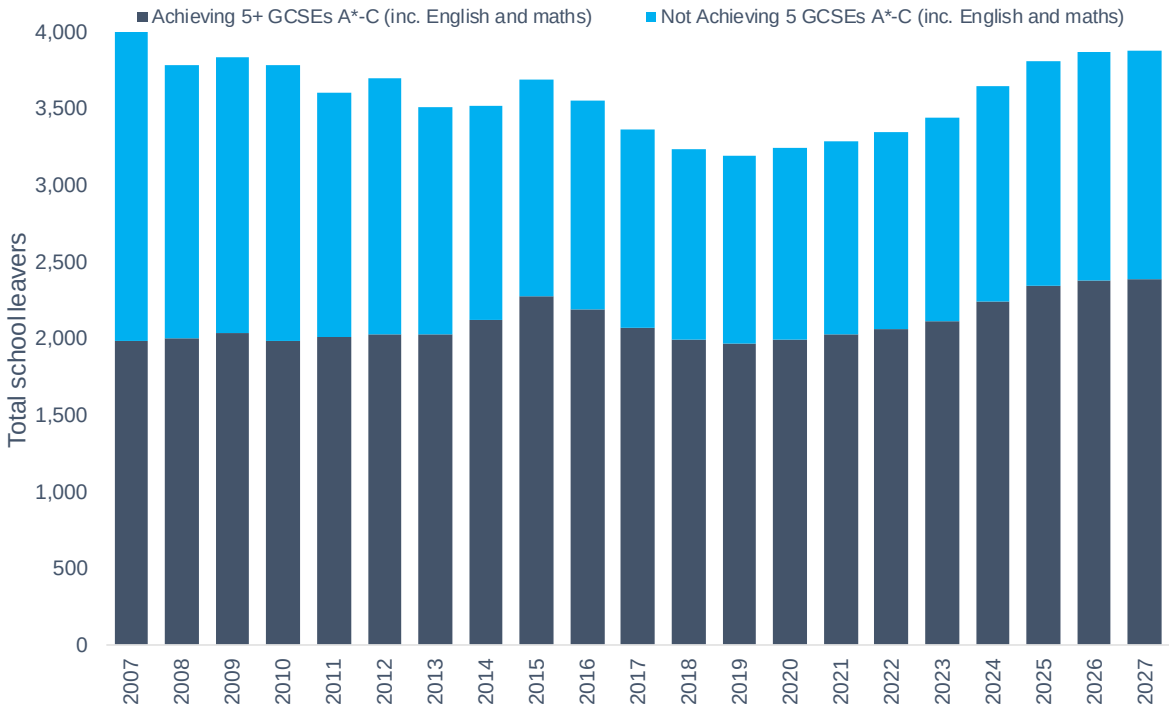
	Ward	P.P change
1	Falls	26%
2	Clonard	26%
3	Shaw's Road	24%
4	Beersbridge	22%
5	Sandown	19%
6	Collin Glen	17%
7	Lagmore	17%
8	Forth River	16%
9	Falls Park	16%
10	Woodvale	16%
11	Beechmount	16%
12	Cregagh	15%
13	Duncairn	15%
14	Orangefield	15%
15	Ballymurphy	14%
16	Belvoir	14%
17	Ballysillan	14%
18	Ballygomartin	13%
19	Turf Lodge	13%
20	Blackstaff	13%

65. At ward level many of the most improved wards are in west Belfast and in inner city areas. Where areas of improvement are evident there may be opportunities to learn from best practice and assist schools in areas which have demonstrated little improvement yet remain towards the bottom of the education rankings.

Future supply of skills from post-secondary education

66. Based on current demographics it is estimated that an average of 3,500 per annum children resident in BCC will leave the school system between 2017-27.

Figure 5.18: Breakdown of qualifications obtained by school leavers proportion that achieved 5 GCSEs (A*-C) including English and maths vs those that did not, BCC (2007 – 2027)



Source: NI School leavers survey

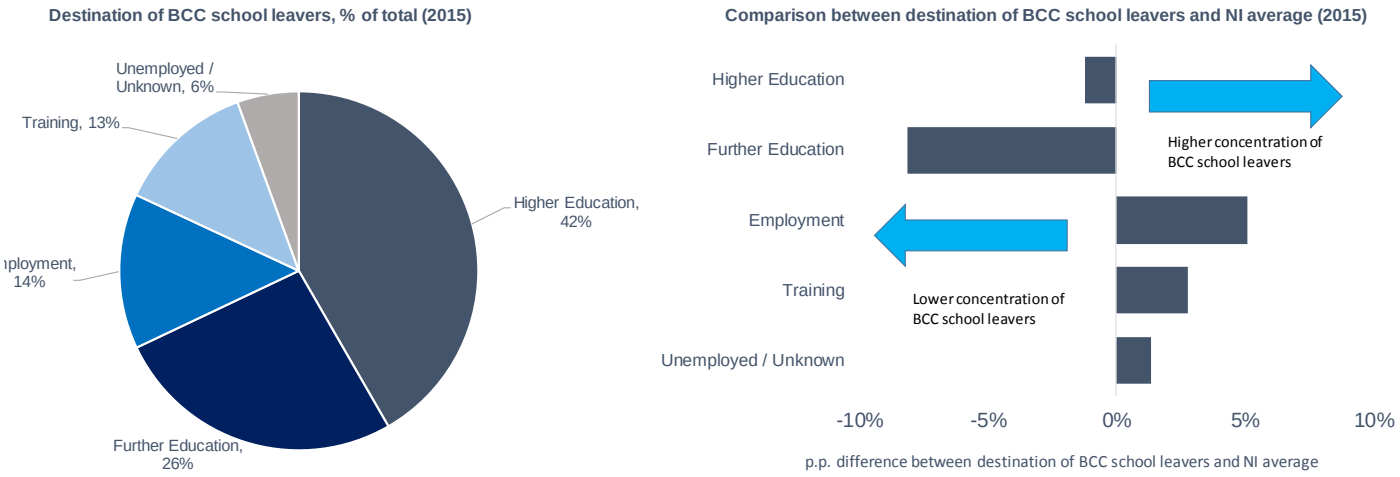
67. Assuming unchanged post-16 school participation and current performance in the school system it is estimated that 15,000 (2017-2027) children resident in BCC will leave the school system without achieving the minimum standard of education expected by the time they leave school. This is an important point, as **a high proportion of school leavers with low skills put pressure on other parts of the education system**. Namely, high enrolment in publically subsidised courses at a relatively low NQF level in Further Education (FE) and participation on publically funded training course such as Essential Skills and Training for Success.

Post-secondary

Destination of school leavers

68. Upon leaving school 42% of school leavers proceed to HE and 26% to (FE). The proportion leaving to HE is similar to NI, however the number of school leavers proceeding to FE is relatively small compared to the NI average. **BCC school leavers are more likely to leave school to become employed (14%); participate in a training programme (13%) or become unemployed/other status (6%) compared to the NI average**.

Figure 5.19: Destination of BCC school leavers as a percent of total and compared with NI average (2015)

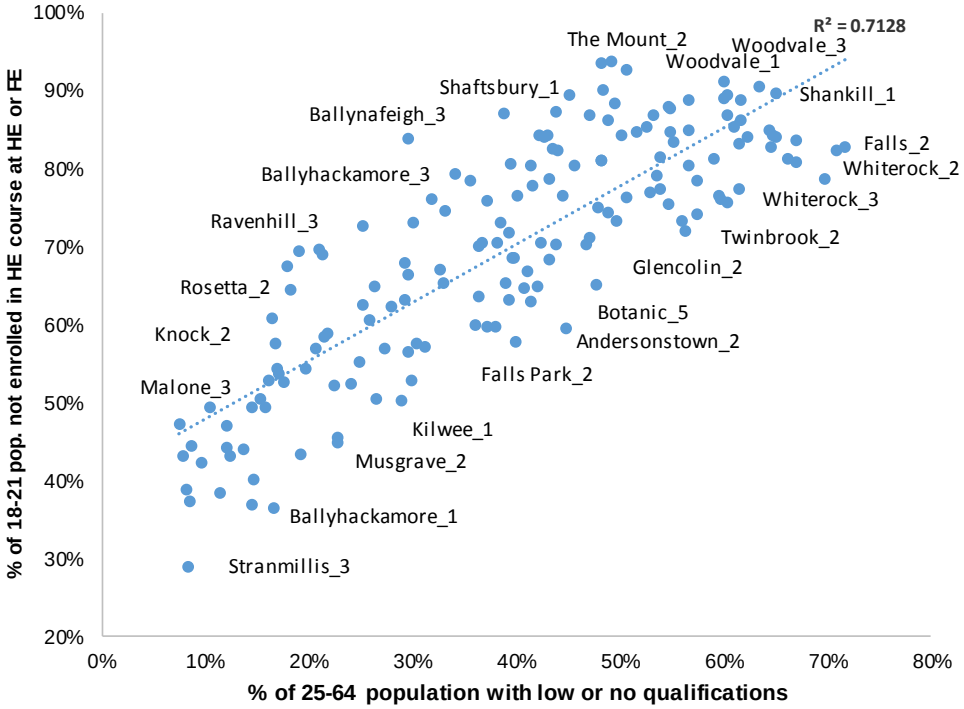


Source: NI School leavers survey

Higher education participation

69. The relatively lower levels of academic achievement amongst BCC school leavers has led to fewer school leavers participating in tertiary education. **It is striking that low participation in HE and FE occurs in communities that are characterised by low-level skills.**

Figure 5.20: Comparison between % of 18-21 population not enrolled at HE or FE (2015/16) vs % of 25-64 population with low or no qualifications (2011), SOA



Source: NI Multiple Deprivation Measure

Note: *SOAs where no data is avilable have been excluded*

70. The above chart suggests that **young people's education aspiration is lower in areas of low adult skills**. While parental education, knowledge and skills clearly

influence a child's development and education achievement, parental aspirations and parental expectations are also important. Unfortunately, aspiration is highly correlated with income levels. This is confirmed by research from the MCS, which finds that 80% of the richest fifth of mothers expect their child to go to University. For the poorest mothers this falls to 40%. Both are high levels of aspiration, but there is a significant gap between rich and poor[31].

71. The participation rate in HE in BCC is summarised in the table below. **Amongst people under 21, BCC has the lowest level of participation in HE amongst NI LGD's at 23%, significantly below the NI average of 37%.**

Table 5.10: Participation rate in Higher Education by age (enrolments by age as a % of respective population), LGDs (2015)

HE enrolments as a % of total population	Aged 18 - 20	Aged 21 - 24	Aged 25 - 59	Aged 60+
Antrim and Newtownabbey	34%	19%	2%	0%
Ards and North Down	42%	21%	2%	1%
Armagh City, Banbridge and Craigavon	41%	19%	2%	0%
Belfast	23%	13%	3%	1%
Causeway Coast and Glens	38%	20%	2%	0%
Derry City and Strabane	40%	22%	2%	0%
Fermanagh and Omagh	47%	25%	1%	0%
Lisburn and Castlereagh	46%	24%	2%	1%
Mid and East Antrim	40%	20%	2%	0%
Mid Ulster	43%	19%	1%	0%
Newry, Mourne and Down	44%	23%	2%	0%
Northern Ireland	**37%**	**19%**	**2%**	**0%**

Source: NINIS

72. Although BCC has the lowest HE participation rate amongst LGD's amongst people under 25, participation rates in older age demographics is closer to the NI average.

73. The higher participation of older people in HE in BCC is partly explained by a higher proportion of enrolments which are part-time (36% in BCC compared to 27% in NI as a whole). The majority of postgraduate enrolments in NI are on a part time basis (55%), this partly explains the higher proportion of postgraduate enrolments in BCC. Almost one-fifth (18%) of BCC residents enrolled in a HE course are studying for a postgraduate qualification – the largest proportion amongst NI LGD's.

[31] Goodman, A., Gregg, P. and Washbrook, L. (2011) Children's education attainment and th aspirations, attitudes and behaviours of parents and children throughout childhood in the UK. *Longitudinal and life course studies* 2(1): 1-18

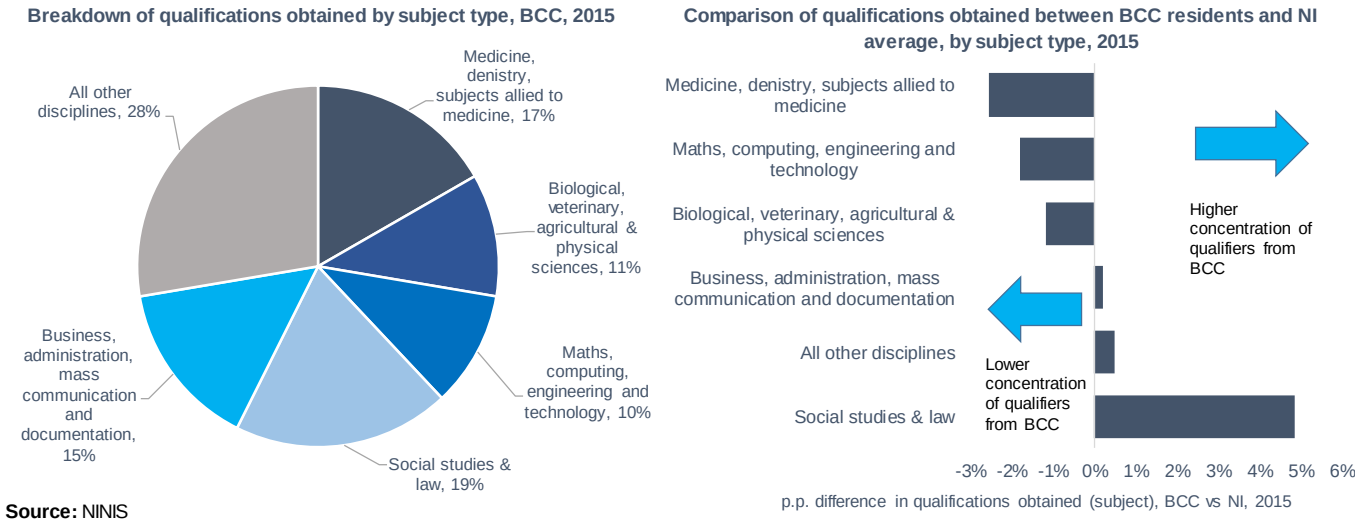
Table 5.11: Part-time and postgraduate enrolments, LGDs (2015)

	Enrolments at HE institutions	% Part-time enrolments	% NI Postgraduate enrolments
Antrim and Newtownabbey	4,510	29%	16%
Ards and North Down	5,280	30%	15%
Armagh City, Banbridge and Craigavon	6,630	23%	14%
Belfast	11,375	36%	18%
Causeway Coast and Glens	4,805	22%	13%
Derry City and Strabane	5,800	22%	13%
Fermanagh and Omagh	4,060	20%	13%
Lisburn and Castlereagh	5,445	29%	16%
Mid and East Antrim	4,350	26%	14%
Newry, Mourne and Down	6,455	23%	13%
Northern Ireland	**63,600**	**27%**	**15%**

Source: NINIS

74. A relatively low proportion of qualifiers from HE are studying degrees in high demand subject areas such as non-medical sciences (11%) and maths, computing, engineering and technology (10%). BCC has the lowest proportion of graduates coming from both of these subject areas amongst NI LGD's. In total 21% of graduates are in these subject categories, compared to 29% in Mid and East Antrim (the LGD with the highest proportion of qualifiers).

Figure 5.20: Higher education qualifications obtained by BCC qualifiers, percent of total vs NI average (2015)



Source: NINIS

75. In considering the subject profile of the NQF level 6+ net requirement there are some imbalances. The largest gaps exist in maths, computing, engineering and technology (15 percentage points). This suggests that **the current subject mix is currently not in alignment with the subject demand for high-level skills under a high growth scenario**.

Table 5.12: Distribution of current BCC qualifiers vs future net requirement for NQF level 6+

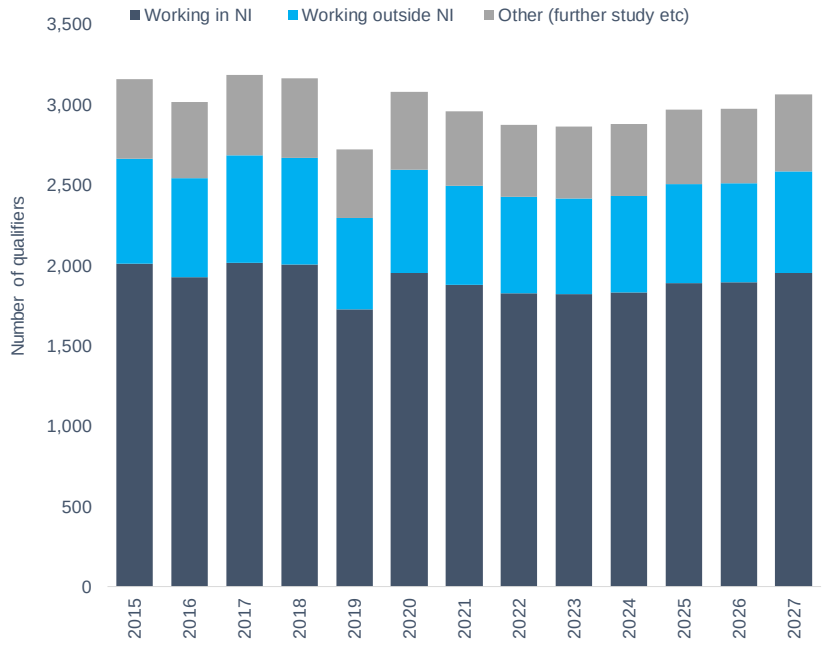
	% distribution of BCC qualifiers (2015)	% distribution of net requirement (2017 - 2027)	p.p. difference
Medicine, denistry, subjects allied to medicine	17%	13%	4%
Biological, veterinary, agricultural & physical sciences	11%	12%	-1%
Maths, computing, engineering and technology	10%	26%	-15%
Social studies & law	19%	12%	8%
Business, administration, mass communication and documentation	15%	16%	-1%
All other disciplines	28%	22%	6%

Source: NINIS

76. At LGD level the subject groupings are too broad to draw firm conclusions. However there does appear to be an abundance of generalist degrees in the 'social studies and law' and 'other' subject categories in comparison to a relative shortage of key Science Technology Engineering and Maths (STEM) related subjects.

77. One other aspect to consider when interpreting the number of BCC residents qualifying from HE courses is the 'brain drain'. The qualifiers data above includes BCC residents studying at both NI HE institutions and in other parts of the UK. Approximately 65% of employed NI qualifiers who graduate from HE institutions in the GB have not returned home six months after graduating. Of employed NI domiciled qualifiers qualifying from NI HE institutions only 11% are recorded outside NI 6 months after graduating. Assuming the same proportions apply to BCC residents, this would imply a brain drain of 616 highly skilled BCC residents in 2015.

Figure 5.21: Location of HE qualifiers 6 months after graduating, BCC (2015 – 2027)[32]



Source: DfE HE leavers survey, NINIS

[32] The fall in qualifiers in 2019 is caused by a fall in the population of 21 year olds in the NISRA population projections.

78. Looking forward, over the coming decade approximately 2,540 BCC residents per annum are forecast to qualify from a HE course (assuming current rates of participation) and enter employment. However, 25% of BCC qualifiers in employment will work outside the NI labour market. Therefore, **over the coming decade BCC will lose 620 highly skilled residents per annum**. On average over the next decade 1,910 BCC residents per annum will gain a HE qualification and enter employment within NI.

Further education participation

79. The total number of regulated enrolments in FE colleges in BCC in 2016 was 17,260, 13% of NI enrolments[33]. The participation rate of BCC residents under the age of 25 is significantly below the NI average. Enrolments as a proportion of the population for people aged 16-18 is 45% in BCC compared to 82% in NI overall.

Table 5.13: Participation rate in Further Education by age (enrolments by age as a % of respective population), LGDs (2016)

FE enrolments as a % of total population	Aged 16 - 19	Aged 20 - 24	Aged 25 - 59	Aged 60+
Antrim and Newtownabbey	76.2%	11.4%	2.6%	0.2%
Ards and North Down	118.3%	15.5%	2.8%	0.7%
Armagh City, Banbridge and Craigavon	111.2%	15.2%	3.6%	0.4%
Belfast	45.3%	9.4%	3.7%	0.5%
Causeway Coast and Glens	69.6%	11.8%	4.3%	0.4%
Derry City and Strabane	58.8%	14.0%	4.5%	0.6%
Fermanagh and Omagh	89.7%	19.0%	3.9%	0.5%
Lisburn and Castlereagh	88.1%	15.9%	3.4%	0.4%
Mid and East Antrim	68.2%	10.8%	2.9%	0.3%
Mid Ulster	97.8%	15.2%	3.6%	0.2%
Newry, Mourne and Down	98.9%	17.9%	4.0%	0.5%
Northern Ireland	**81.6%**	**13.9%**	**3.7%**	**0.5%**

Source: NINIS

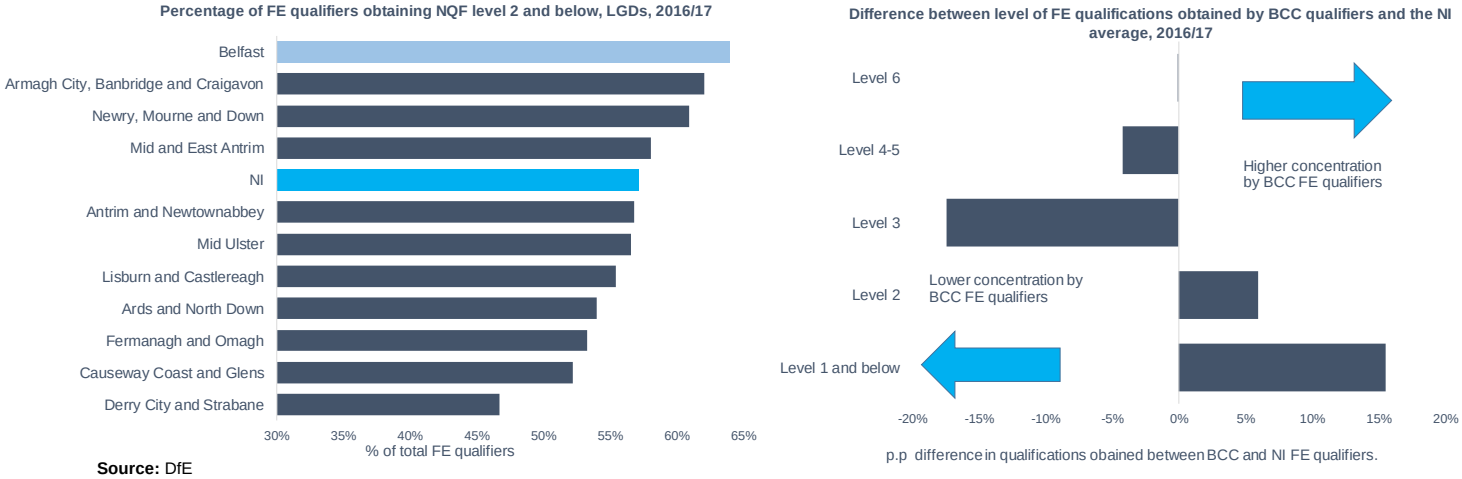
Note: Figures refer to total FE enrolments rather than individuals enrolled at FE. As such, one individual may have multiple enrolments leading to percentages in the above table of greater than 100.

80. **BCC residents have low rates of FE participation compared to other LGDs**. This is partly explained by a higher proportion of BCC school leavers entering employment, unemployment or training (32%) compared to the NI average (23%). However, with almost 1,000 BCC school leavers entering FE each year this is still a sizable cohort of young people entering FE.

81. **The majority of individuals qualifying from FE colleges tend to qualify from relatively low-level courses**. In 2016/17, 6,770 BCC residents qualified from FE colleges. Of those qualifiers 64% qualified from courses equal to NQF level 2 and below and 26% from courses equal to NQF level 3.

[33] The number of enrolments is higher than the number of individuals enrolled. In NI FE there are approximately 1.9 enrolments on regulated courses per individual.

Figure 5.22: Qualifications by NQF level in Further Education (2016/17)



Source: DfE

82. The relatively high level of qualifiers at NQF level 2 and below is concerning from two perspectives.

    - **Longer term cost of school underachievement.** In BCC, 79% of school leavers have achieved NQF level 2 (i.e. 5 GCSE's at grade A*-C) by the time they leave compulsory schooling. However, only 62% of BCC school leavers achieve NQF level 2 including English and maths. This contributes to the relatively high number of enrolments in FE colleges in low-level courses that often do not involve the participant increasing their level of qualification and moving up the NQF scale. There is a significant fiscal cost associated with delivering low NQF level courses, and must be considered within the context of the long term cost of under achievement in schools.

    - **Limited high-level vocational and technical education.** Only 11% of individuals gaining qualifications in FE colleges are achieving a qualification at NQF level 4 or higher. Although this proportion is depressed by the sheer number of people undertaking low-level qualifications in FE colleges. The overall number of people in BCC qualifying from NQF level 4+ courses in FE was 726 in 2016/17.

83. **Vocational and technical education is important from an economic perspective**. Skills demand amongst NI employers is edging higher. If the education system is to meet this demand we need to ensure that a greater proportion of the workforce has higher-level skills. Some of this demand will be fulfilled by graduates. However, less than half of school leavers (43%) pursue the university route[34]. Education and skills policy should be equally concerned about the half of school leavers who do not go on to HE.

84. On the low skills side, **the evidence on improving basic skills such as literacy and numeracy is compelling**. Indeed, a recent report by the OECD concluded that the economic gains that would accrue solely from eliminating extreme

[34] Although some school leavers do attend university when they are older.

underperformance in high-income OECD countries by 2030 would be sufficient to pay for the primary and secondary education of all students[35].

85. The relatively small number of people qualifying from NQF level 4+ courses in FE highlights the perceived difference in status between FE and HE. Some vocational qualifications, particularly those at higher (level 3+) and those that are familiar to employers (e.g. the Higher National Diploma (HND)) are highly valued by the labour market. By contrast, the economic value of some lower level qualifications such as NVQ2's is mixed and often considered quite low.

86. **Parents and children often value HE and FE differently**. Part of the reason is that sectors which have traditionally employed a high number of people with vocational qualifications now employ many less people. For example, manufacturing accounted for 27% of NI employee jobs in 1978 compared to 11% today. Another reason is that the sheer number of qualifications offered by FE colleges – all with different requirements – tends to confuse parents and students alike[36]. Finally, the careers information provided at school may be skewed towards a university education and not adequately communicate the economic returns to higher level professional and technical courses at FE. In other words, FE may not be presented as a viable alternative to children when at school[37].

87. This implies two things. Firstly, **labour market information is required to adequately measure the potential returns to qualifications in FE colleges**. New research methods have been employed in other parts of the UK to estimate the returns to FE using data linking methods and administrative datasets[38]. There is little reason why similar research could not be undertaken in NI[39]. Secondly, this information be communicated to young people to inform them of the value of different professional and technical options. **Ensuring that young people are aware that there are alternative options to University** to gain a quality education can only be regarded as positive.

88. Although no data exists in relation to the destination of leavers from FE colleges in NI at LGD level, it is possible to estimate the destination of leavers by assuming the NI data holds constant across NI sub regions.

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[35] OECD (2015) Universal basic skills: what countries stand to gain.

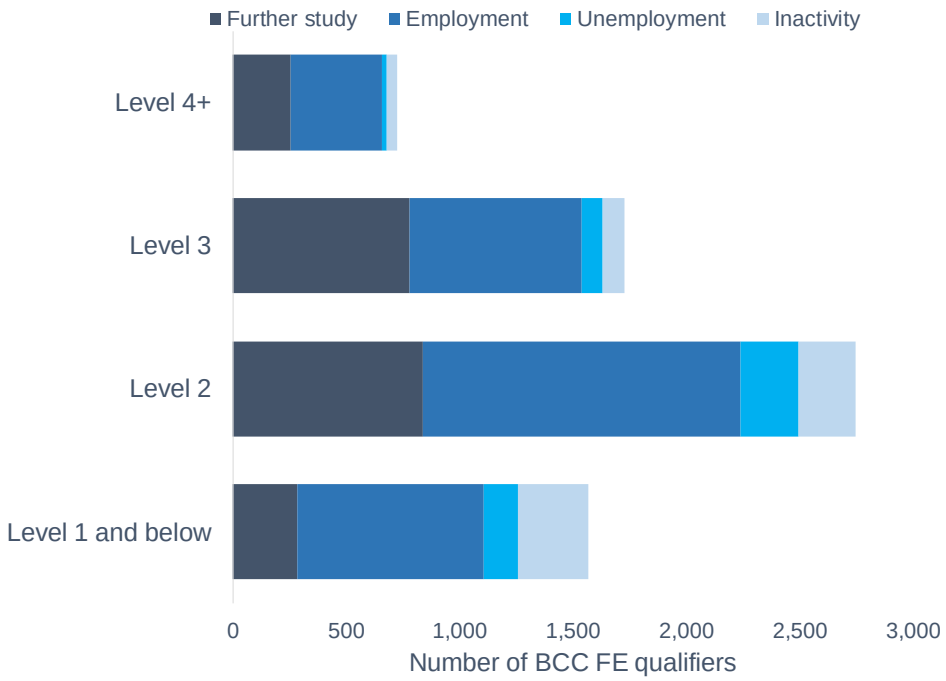
[36] Institute for Government (2017) All Change Why Britain is so prone to policy reinvention, and what can be done about it.

[37] OFSTED (2016) Getting ready for work

[38] Cambridge Econometrics and Warwick Institute for Employment Research (2015) Measuring the net present value of further education in England.

[39] This type of research would require the passing of the Digital Economy Act to provide a legal gateway to enable data linking. Other parts of the UK have this in place. However, in NI the act was not passed prior to the collapse of the NI Assembly.

Figure 5.23: Destination of FE qualifiers by level of NQF achieved, BCC (2016/17)



Source: FE Leavers survey & UUEPC

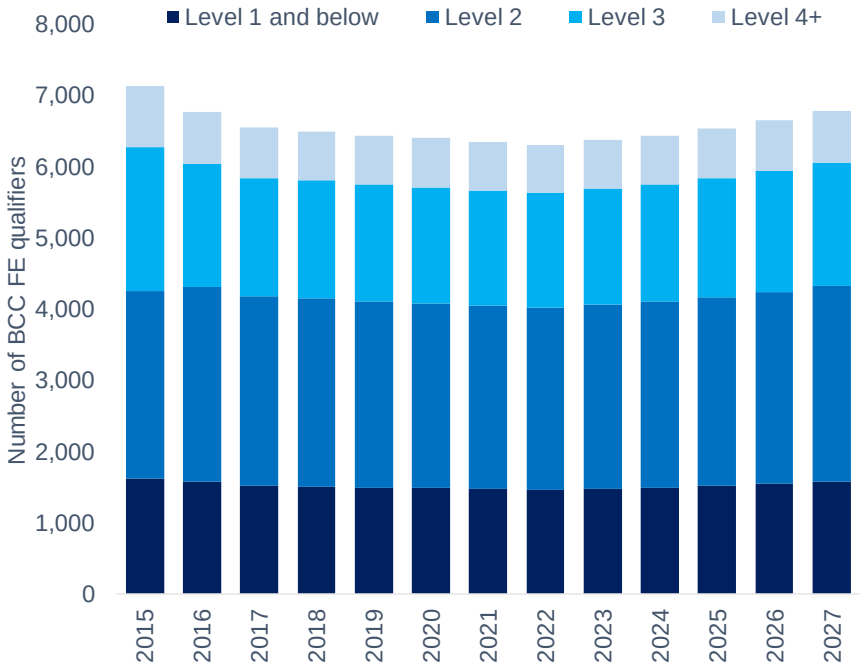
89. **It is estimated that nearly one-third (32%) of FE qualifiers in BCC proceed to further study after achieving their qualification**. Rates of progression onto other education courses is high across NQF level's 1-5. However, people achieving levels 4-5 are likely to proceed to HE.

90. Progression in courses below NQF level 3 is more ambiguous. Although a large proportion of qualifiers at this level proceed to further study (26%), **it is not clear from the data whether this represents upward progression to higher-level courses or is a recycling of learners onto other courses at the same NQF level.**

91. To assess whether learners are progressing to higher levels of qualification and whether there is an element of learner recycling further research is required. To accurately assess this it is **important that longitudinal systems of data collection are improved to effectively track individuals** through their education journey.

92. Looking forward, based on current levels of participation and enrolment patterns, it is estimated that there will be an average of 6,490 per annum individuals living in BCC qualifying from FE over the next 10 years.

Figure 5.24: Total FE qualifiers by level of NQF achieved, BCC (2015 – 2027)



Source: NISRA, FE Leavers Survey & UUEPC

93. On average, over the coming decade 4,130 BCC residents per annum will gain a qualification below level 2 at FE, 1,670 will qualify from a level 3 course; and 700 will achieve a qualification above NQF level 4.

Adult learning and training programmes

94. In 2016 in BCC there were 6,180 essential skills enrolments amongst BCC residents. These are courses designed to improve peoples' reading, writing, maths or ICT skills. In other words, to ensure people are equipped with basic skills. The majority of participants are aged under 25 (85%) and not in employment (80%).

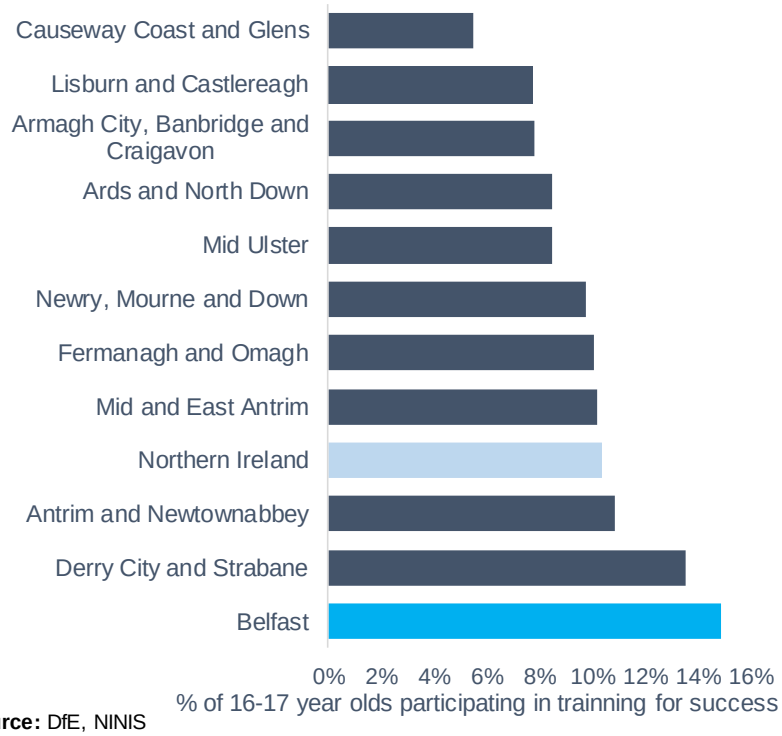
Table 5.14: Essential Skills enrolments (% of 15-24 year old population), LGDs (2016)

Local Government District	Number of enrolments	Enrolments as % of 15-24 population
Northern Ireland	**35,780**	**15%**
Antrim and Newtownabbey	2,590	15%
Ards and North Down	2,460	14%
Armagh City, Banbridge and Craigavon	3,550	14%
Belfast	6,180	12%
Causeway Coast and Glens	3,050	16%
Derry City and Strabane	3,640	18%
Fermanagh and Omagh	2,390	17%
Lisburn and Castlereagh	2,180	13%
Mid and East Antrim	2,780	17%
Mid Ulster	3,250	18%
Newry, Mourne and Down	2,990	13%

Source: DfE, NINIS

95. Another programme which low achievers join after leaving school is Training for Success (TfS). TfS guarentees up to 104 weeks of training to people aged 16-17. Although it is possible to achieve a level 3 qualification, almost all participants are working towards either an NQF level 1 or 2 qualification. In BCC there are currently 1,200 people participating on the programme.

Figure 5.26: Training for Success participation (% of 16-17 year old population), LGDs (2016)



Source: DfE, NINIS

96. On a standardised basis, BCC has the highest participation rate on the programme. When considered against a relatively higher proportion of low achievers at school, BCC's higher TfS participation is unsurprising. The number of TfS participants in 2016 is equal to just under one-third (32%) of the entire cohort of school leavers in 2015. **These proportions are indicative of the ongoing cost of failing to tackle underachievement at a much earlier stage in the school system.**

97. The other major government-training programme is Steps to Success. In BCC there are 2,830 enrolments in the programme. On a per capita basis, after Derry City and Strabane, there is a higher level of participation in the programme in BCC compared to other LGD's. Participation in this programme is compulsory for out of work adults in receipt of unemployment benefit (for job seekers aged 18-24 after nine months and after twelve months for people aged over 25). Therefore, enrolment numbers are inextricably linked to the employability of local residents and is higher is areas where there are higher levels of unemployment.

Table 5.15: Steps to success participation (per 1000 16-64 population), LGDs (2016)

Local Government District	Total enrolments	Enrolments (per 1000 16-64 population)
Derry City and Strabane	2100	21.9
Belfast	2830	12.7
Causeway Coast and Glens	1050	11.7
Fermanagh and Omagh	660	9.1
Ards and North Down	860	8.9
Newry, Mourne and Down	960	8.7
Armagh City, Banbridge and Craigavon	1020	7.7
Mid and East Antrim	660	7.6
Antrim and Newtownabbey	560	6.3
Mid Ulster	580	6.3
Lisburn and Castlereagh	530	5.9

Source: NINIS
Note: Figures may not sum due to rounding.

98. Those on the training scheme are out of work but are not classified officially as unemployed. As such, the data provides an indication for hidden unemployment and is important to consider in the context of better understanding the performance of the local labour market.

Key points and policy remarks

Key points

99. There are a number of key points which have been highlighted in this chapter:

- The widening of access of HE has contributed to an increase in the proportion of BCC workers with a degree level qualification.
- There are considerable differences between the skills profile of employed and non-employed residents in BCC.
- The impact of family background and parents is critical in child development. Parents matter not just for the resources they provide a child but for their own education achievement, for their attitudes towards education, for their aspirations and their methods of parenting. The home learning environment provided by parents, particularly in the early years, is arguably a more important determinant of academic achievement than initiatives undertaken within schools.
- Empirical literature highlights a range of factors that negatively influence children's academic performance such as income, level of education of parents, household employment status, poverty and household structure. A review of data has highlighted that BCC performs poorly across a range of socioeconomic indicators which are known to be predictors of low achievement.
- The proportion of low achievers at GCSE level in BCC is significantly higher than other LGDs. Under achievement is spatially concentrated in high deprivation areas across the city.
- In BCC there is a reasonable sized cohort of school leavers who achieve an NQF level 2 qualification (i.e. 5 GCSE's A*-C), but have not achieved an A*-C grade in English and maths.

- Although there has been an improvement in the performance of pupils entitled to FSM's, the gap between FSME and non-FSME pupils has remains relatively unchanged.
- HE participation is low in BCC relative to other NI LGD's, and participation appears to be very low in communities typified by low levels of qualification amongst the adult population.
- A relatively low proportion of students study STEM related subjects when compared against the subject distribution of the NQF level 6+ net requirement.
- Very few FE qualifiers achieve a qualification level above NQF level 3.
- Training for Success participation in BCC is the highest amongst NI LGD's, which is a direct consequence of having a relatively high number of low achievers at GCSE level.

Policy remarks

100. The above data has a number of implications for policy:

- To overcome social disadvantage there is a need to intervene with high quality and intensive early education programmes. Young children at risk of low education achievement who have not yet begun formal schooling should not be beyond the reach of public policy.
- Investment in children must be sustained throughout schooling if they are to be effective in the long-run.
- Early intervention programmes are likely to be high cost, and therefore need to be targeted at disadvantaged pupils. Particularly if such investments are to be sustained throughout a child's schooling. The policy challenge is to help these vulnerable families build up more supportive environments despite the many social and economic difficulties they face.
- While schools can help under-achieving pupils, may of the factors that determine academic achievement are outside the control of the school itself and requires a more open debate about the role of schools and the responsibilities of parents.
- A relatively high proportion of graduates are in narrow unspecialised subjects, and STEM shortages are evident. Improving labour market intelligence in this area by using data from tax records will provide an invaluable source of data to help deliver world class careers advice.
- Better systems of data collection could provide insight into a number of areas including graduate underemployment; earnings data related to different courses; and returns to FE qualifications. Other countries use this form of data in a number of ways ranging from curriculum design to funding decisions.

6. Can Belfast's residents service tomorrow's skill needs?

Total skills supply in BCC

1. In total 12,920 BCC residents per annum are forecast to gain qualifications over the coming decade. However, only 6,970 people per annum are projected to enter the labour market (i.e. become economically active whereby they are either employed or unemployed and actively seeking employment). The majority of the remainder of people gaining qualifications proceed to further study.

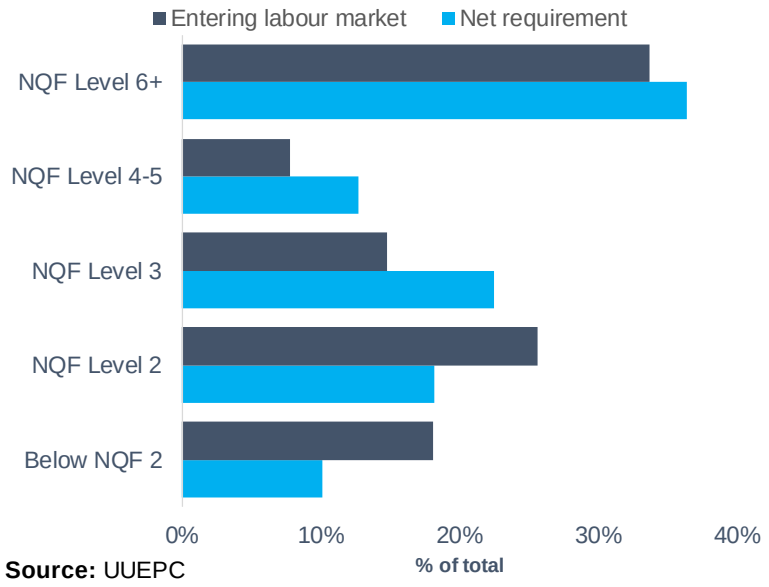
Table 6.1: Labour market supply by skill level, BCC (2017-2027, annual average) [40]

	School leavers		FE leavers		HE leavers		Total	
	Total leavers	Entering labour market	Total leavers	Entering labour market	Total leavers	Entering labour market	Total leavers	Entering labour market
Below NQF level 2	730	320	1,500	930	0	0	2,230	1,260
NQF level 2	720	210	2,630	1,590	0	0	3,350	1,790
NQF level 3	2,040	210	1,650	820	0	0	3,690	1,030
NQF level 4 - 5	0	0	640	350	240	190	880	540
NQF level 6	0	0	30	20	1,980	1,630	2,010	1,650
NQF level 7 - 8	0	0	0	0	750	700	760	700

Source: UUEPC

2. Benchmarking the skills profile of people leaving the labour market each year versus the net requirement highlights some important issues. Firstly, **the number of graduates appears to be largely in alignment with the net requirement suggesting that the subject mix of graduates is likely to be more of an issue than the volume of graduates overall.**

Figure 6.1: Net requirement vs skills profile of labour market entrants, BCC (2017-2027)



Source: UUEPC

[40] Data includes Belfast residents studying in non-NI HEI's. Entering the labour market refers to education leavers who have become economically active.

3. Areas of misalignment appear to be an **oversupply of low-level skills at NQF level 2 and below**. This finding is consistent with the relative underperformance of BCC residents at school and the relatively high proportion of residents studying low NQF level courses in FE and through training courses. There is also a **shortage of mid-level skills at NQF level 3-5**. This is largely a supply driven issue with so few people studying qualifications at these levels who enter the labour market. The majority of people who gain qualifications at these levels proceed to further study. This results in a deficit of people with mid-level skills participating in the labour market.

Local level skills balance

4. From the data discussed in the previous chapter relating to skills supply in BCC it is evident that **there is a significant disparity in the skills profile between different areas of the city**. For example, just 15% of people in Botanic have a qualification level below NQF level 2 compared to 46% in Court, Similarly, in Balmoral 83% of school leavers have achieved at least 5 GCSE's including English and maths compared to only 46% in Court[41].

5. The table below presents a summary of where each District Electoral Area (DEA) ranks amongst the 80 DEA's in NI across a range of education, skills, economic and social indicators.

Table 6.2: Summary of BCC DEA scorecard (1= top performing in NI, 80= bottom performing in NI)

		Black mountain	Oldpark	Court	Titanic	Castle	Ormiston	Balmoral	Botanic	Lisnasharragh	Collin
Skills flow	% of school leavers achieving 5 GCSE's (including English and maths)	76	79	80	77	51	17	5	52	11	70
	% of school enrolments entitled to FSM	77	79	80	76	64	13	12	72	20	74
	% of school leavers entitled to FSM achieving 5 GCSE's (including English and maths)	75	74	76	68	67	1	13	61	26	70
	% of FE qualifiers achieving a highest level of qualification at NQF level 2 and below	66	74	80	78	75	54	53	73	67	35
	% of FE qualifiers achieving a highest level of qualification at NQF level 2	69	68	78	76	73	59	66	80	64	44
	Qualifiers from tertiary level education in either FE or HE as a % of the 20-24 year olds	76	77	79	78	57	13	6	80	15	62
	% of HE qualifiers achieving a postgraduate qualification (NQF level 7-8)	78	66	69	7	23	6	2	1	3	39
	% of HE qualifiers gaining qualifications in maths, computing, engineering & technology	68	65	80	18	61	57	31	53	64	71
Skills stock	% of 16-64 population with low qualifications (Below level 2)	76	79	80	67	32	7	3	2	5	59
	% of 16-64 population with high qualifications (NQF level 4+)	78	79	80	25	16	5	2	7	3	69
	% of 16-34 population with low qualifications (Below NQF level 2)	75	78	80	64	54	14	5	1	3	61
	% of 16-34 population with high qualifications (NQF level 4+)	76	79	80	7	20	6	2	4	1	69
Labour market and socio economic indicators	Social security clients (client group analysis) as a % of the population (16-64)	77	79	78	71	67	11	17	16	10	75
	Social security clients (client group analysis) as a % of the population (16-34)	73	80	79	74	63	18	13	7	26	75
	Housing benefit claimants as a % of the population (16-64)	75	79	78	76	72	24	31	56	21	73
	Housing benefit claimants as a % of the population (16-34)	64	80	79	76	69	25	21	32	24	71
	% of households with no adults in employment	77	78	79	67	69	48	46	24	28	63
	% of households with no adults in employment with dependent children	75	77	76	65	58	11	12	28	8	78
	% of households with lone parents with dependent children	77	78	76	72	68	19	25	22	11	80
	% of people employed who are either managers/senior officials or professionals	80	79	78	75	48	7	9	76	40	73
	Employment rate (%, 16-74 population)	77	78	79	55	59	15	28	48	5	71
	Unemployed who have never worked (% of unemployed)	79	76	77	69	64	20	30	65	38	75

Source: NISRA, DfE, DE, 2011 Census, DfC, UUEPC
Ranked in the top 10 performing DEA's in NI
Ranked in the bottom 10 performing DEA's in NI

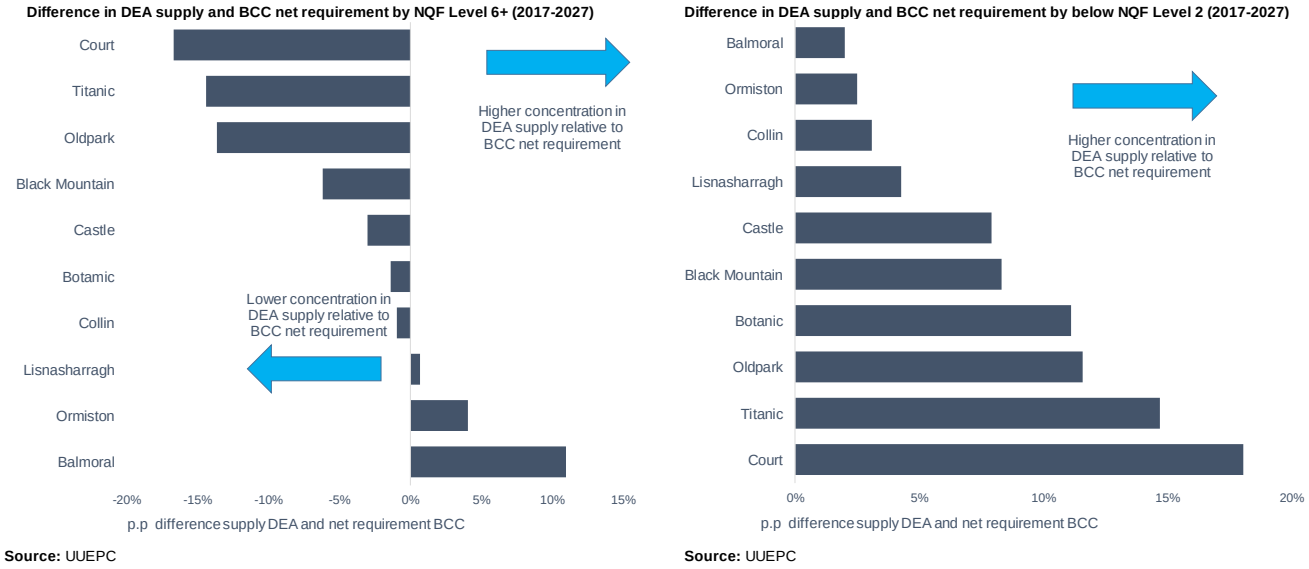
[41] A list of the electoral wards which comprise each DEA is included in Annex E.

6. There are clear divides across different parts of the city, with some DEA's within BCC consistently ranking amongst the poorest performing areas in NI across skills, social and economic indicators. It is concerning that **areas that have performed poorly with regard to the skills stock are also performing poorly on metrics related to the flow of skills**. By implication, these areas are falling behind more affluent parts of BCC and in all likelihood will continue to rank amongst the lowest performing DEA's for many years to come without some form of policy intervention.

Aligning the demand and supply of skills at local level

7. The differences in the supply side of the economy in sub-regions of BCC lead to slightly different skills balances across the city. The figure below highlights the percentage point difference between the proportion of NQF level 6+ qualifiers within the supply of people entering the labour market across schools, FE and HE and the proportion of NQF level 6+ people demanded as part of the net requirement over 2017-27. The largest gap is recorded in Court where the supply of NQF level 6+ qualifiers is 16 percentage points below the net requirement. This compares to Balmoral, where the supply of high-level qualifications is 13 percentage points higher than its share of the net requirement. Such gaps are indicative of the large differences in HE participation across different parts of the city discussed in the previous chapter (and illustrated using GIS in Annex D2).

Figure 6.2: BCC - percentage point difference between the demand and supply of high skill (NQF level 6+) and low skill (below level 2) labour (2017-2027)



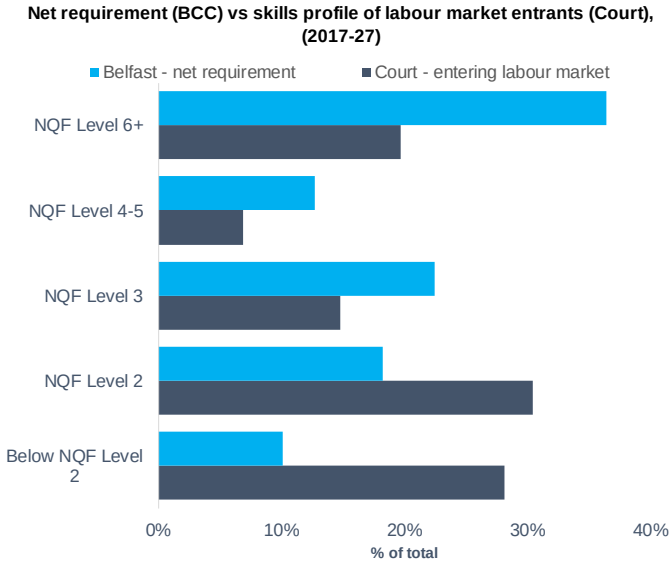
Source: UUEPC

Source: UUEPC

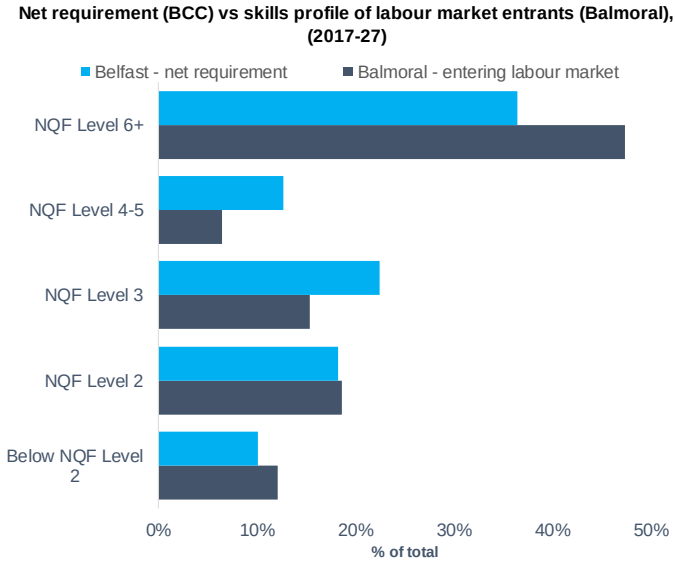
8. **Within BCC the oversupply of low skills varies across the city**. For example, in Court 28% of people enter the labour market with a highest level of qualification below NQF level 2, this compares to just 12% in Balmoral. The differences in skills supply result in an 18 percentage point difference between the demand and supply of low-level skills in Court, compared to a 1 percentage point difference in Balmoral.

9. There are significant differences in the supply of high-level skills across areas within NI. For example, in Court only 20% of the qualifiers entering the labour market are qualified to NQF level 6+ compared to 50% in Balmoral.

Figure 6.3: BCC Net requirement vs skills profile of labour market entrants, Court and Balmoral (2017-2027)



Source: UUEPC



Source: UUEPC

10. There is a **diverse range of labour markets operating within BCC that specialise in producing qualifiers at differing ends of the skills spectrum**. Therefore, sections within BCC face a disparate set of labour market challenges and produce qualifiers associated with very different types of jobs. The high proportion of low level qualifiers in Court are dependent upon non-graduate jobs that are easily accessible given labour mobility problems amongst low skill and low wage jobs.

11. Where there is misalignment with the net requirement firms have the option to import the skills required. Historically firms have tended to import higher numbers of people to fill vacancies requiring lower levels of qualifications. If the level of in-migration were to decrease in the future it would become imperative to re-active dormant labour which is currently economically inactive to fill these positions.

12. This analysis has only been possible using DEA's. Sub-regional analysis at more disaggregated geographies is not possible. Although school and HE data is available at ward level, it is not possible to get FE data on a 'number of individuals' basis. It is likely if this analysis had been undertaken at ward level the divergent nature of local areas within the BCC labour market would be more pronounced. The demand and supply balances for all DEA's within BCC are included in scorecards in Annex F of this report.

Key points and policy remarks

Key points

13. There are a number of key points which have been highlighted in this chapter:

- The number of graduates appears to be largely in alignment with high-level skills demand. Therefore, the subject mix that graduates study is more likely to be an issue than the volume of graduates overall.
- There are a shortage of people entering the labour market with mid-level skills (NQF level 3-5).

- There is an oversupply of people with low level skills, with relatively few job opportunities projected for education leavers below NQF level 2.
- There is a huge difference in the skills profile across different areas within BCC. Areas that have performed poorly with regard to the skills stock are also performing poorly on metrics related to the flow of skills.

Policy remarks

14. The above data has a number of implications for policy:

- There are some areas of BCC where there is severe misalignment between the demand and supply of skills. From an economic policy perspective this suggests two possible approaches. Firstly, to ensure that there is a mix of opportunities created across the economy at all skill levels to enable everyone to benefit from growth. Secondly, to upskill large numbers of the population to meet the demand for higher-level skills.
- It is disappointing that many of the lowest performing areas across a range of skills measures are the same areas which have scored poorly on socioeconomic indicators for more than a generation. Low levels of school performance indicates that these areas are falling further behind and need to take priority in any inclusive growth agenda. However, it is important that the effect of previous initiatives be considered. These areas have been the attention of policy focus in the past, yet there appears to have been little relative improvement.
- The factors affecting education performance span a wide range of policy areas. Therefore, a multi-agency locally focussed response is required. With limited examples of best practice in transforming 'left behind' places there is scope to test pilot initiatives.

7. Summary and policy remarks

1. This report has provided a review of recent skills trends in Belfast and developed an economic forecasting model to forecast the demand for skills under a high growth scenario consistent with the spirit of *the Belfast Agenda.*

2. The review and modelling paints two very different pictures of BCC.

   - **Belfast's workplace:** Belfast is the key regional driver of the NI economy. It is home to many of NI's high productivity and high skilled jobs, and has a high concentration in sectors forecast to experience the most rapid growth over the coming decade.

   - **Belfast residents:** The skills stock in Belfast compares unfavourably to the NI average. However, it is more concerning that Belfast ranks consistently amongst the lowest performing LGD's on education measures relating to young people such as school performance and participation in tertiary education. Low performance is highly concentrated within certain areas of BCC.

3. Aligning the skills supply in BCC to the likely future demand is particularly challenging. It is a challenge that many cities and countries are facing, and few have achieved an optimal balance. In BCC, improving the skills of residents is particularly challenging as the issues affecting skills transverse a range of social and economic issues that are deeply entrenched within certain areas in BCC. This report does not make policy recommendations, but a number of policy observations are drawn out.

Demand side growth of the Belfast economy

4. **Job growth in BCC was the second fastest amongst NI LGD's over the 2012-17 period**, accounting for 36% of job growth in NI. Job growth has been particularly fast in admin and support, other services, accommodation, professional services and ICT.

5. Under a high growth scenario, future job growth (expansion demand) over the coming decade in BCC will be driven by high skill sectors such as ICT and professional services. This translates to high growth in science and technology occupations, which highlights the importance of education performance in STEM subject areas.

6. **When focusing on skills forecasting it is prudent to plan for skills needs in an aspirational nature based on the ambitions of economic policy**. There is a risk of oversupplying skills if the aims of economic policy are not achieved. This would involve a personal cost to individual's investing in their skills development who are unable to find suitable employment opportunities. However, this potential cost is relatively lower when considered alongside the potential cost of undersupplying skills. If businesses are unable to find the skilled labour required to expand their businesses it depresses competitiveness, productive capacity and holds back future job growth.

The importance of replacement demand

7. Although BCC is forecast to experience rapid employment growth in the UUEPC high growth scenario, **net replacement demand provides 1.5 times as many job opportunities** (replacing workers who have retired, moved to another position etc.).

8. The largest sectors tend to be associated with the highest levels of replacement demand. Therefore, sectors such as health, retail and public administration will have relatively large levels of replacement demand in the BCC economy. This is an important point with regard to careers advice, as sectors do not necessarily have to be growing rapidly in order to provide job opportunities.

Net requirement from education and migration

9. The net requirement from education and migration is the total number of job opportunities (expansion and replacement) which require labour from either the education system or from migration (i.e. that the demand cannot be filled from inside the existing labour market).

10. The sector forecast to provide the most job opportunities in BCC is administration and support services. This is a useful example relating to the importance of replacement demand. Although administration and support services are forecast to create less than half as many additional jobs as professional services, it creates more job opportunities overall through higher replacement demand. This emphasises the point that **sectors do not have to be growing rapidly in order to create job opportunities**.

Composition of the net-requirement

11. Of the net requirement from education and migration over the coming decade, 36% of job opportunities will require a degree level qualification (NQF level 6+). Only 10% of the net requirement from education and migration will require qualifications below NQF level 2.

12. Individuals with low levels of education attainment and skills are increasingly disadvantaged in the labour market. **The net requirement skills profile is much more highly skilled than the current stock of workers in BCC**. This suggests that it is imperative that the number of young people with low-level qualifications is minimised. Education and labour market policies that support the most vulnerable groups can bolster inclusive economic growth by equipping individuals of all backgrounds with the skills to obtain 'good' jobs.

13. The most in-demand subjects amongst graduates (NQF level 6+) are maths and computer science; business and finance; and medical related subjects. At sub-degree level (NQF level 4-5) the most in-demand subjects are health, public services and care; art, media and publishing; and ICT.

Intra labour market flows

14. **The majority of job vacancies are filled by people already working in the labour market (i.e. job-to-job movements).** Many of the vacancies requiring lower levels of qualification are filled within the labour market rather than recruitment from the education system (net requirement).

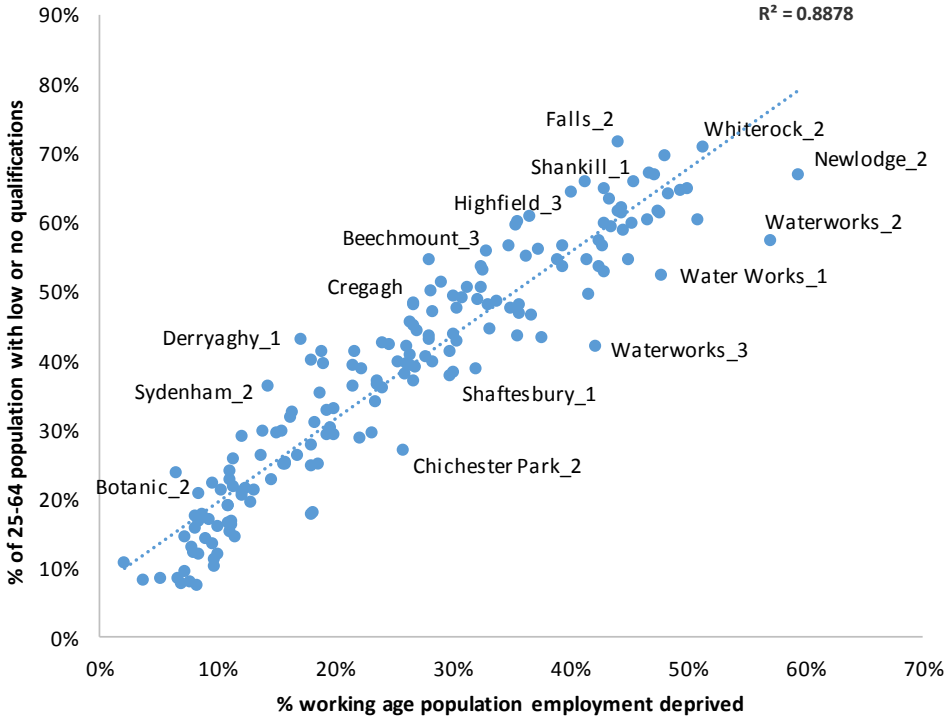
15. Although there remains a significant proportion of people working in the labour market with low-level qualifications, they have work experience and are not necessarily low skilled. There is an insider-outsider element to the end of the labour market characterised by low qualifications. Individuals inside the labour market have some mobility to move between jobs. However, once a person with low levels of qualifications is out of work it is difficult for them to find suitable opportunities to re-engage in the labour market.

The importance of skills

16. Economic and social development are closely related to the skills of the population. The OECD survey of adult skills highlighted that individuals with poorer foundation skills are far more likely than those with advanced literacy skills to report poor health, to believe they have little impact on political processes, and not to participate in volunteer activities[42]. There is a wide range of evidence available in published literature to demonstrate the **importance of formal skills in driving economic growth and providing a return to those investing in higher-level skills.** For example, over 86% of working age people in BCC with a NQF4+ qualification are in employment compared to 58% amongst working age people with a highest level of qualification below level 3. In addition, a graduate (NQF level 6+) has an earnings premium of more than 100% compared to a person with a highest level of qualification below NQF level 2.

[42] OECD (2012) The Survey of Adult Skills. Readers companion, second edition.

Figure 7.1: Proportion of 25-64 year olds with low or no qualifications (2011) versus % of working age population employment deprived (2015/16), Belfast City Council, SOA



Source: NI Multiple Deprivation Measure

Note: *Employment deprived is defined as proportion of working age population who are in recipt of at least one employment related benefit, and individuals who are not in recipt of an employment related benefit, nor have received income from employment*

17. There are two important elements when considering the stock of skills within BCC. Firstly, the difference between the stock of skills in the jobs in the city (the workplace) and the skills of the residents; and, secondly, the demographic composition of the available labour.

18. **BCC's workplace has a relatively higher concentration of employment in what are typically high qualification sectors/occupations**. Allied to this BCC has a much higher concentration of tertiary qualified people working in BCC compared to the NI average.

19. **The skills profile of BCC residents is significantly lower than the skills profile of the BCC workplace**. This is an important issue to consider and highlights the difficulty that some residents will have accessing employment within BCC. Labour mobility in NI is low relative to other parts of the UK[43]. Therefore, a mismatch between the skills of residents and jobs within an area will lead to wider employability challenges, particularly amongst the low skilled.

20. The difference in the skills profile of residents and workplace employment within BCC is partially explained by commuting flows. A high proportion of BCC's workplace employment is taken up by people outside the BCC area (most of whom live in the

[43] Oxford Economics (2014) Labour mobility in Northern Ireland. Analysis of the determinants of labour mobility, and the degree of and barriers to labour mobility in Northern Ireland. A report for the Department for Employment and Learning.

wider BCR area). **Belfast is a net importer of skills**, with in-commuters working in BCC having a higher average level of qualification than BCC residents.

21. To improve the employability prospects of BCC's residents there are a number of options:

    - To provide more employment opportunities to people with lower level skills. This is often a consideration overlooked by economic policy, which tends to focus on raising employment in high productivity jobs. However, raising the employment rate from 69% to 75% at levels of average productivity would have roughly the same GDP impact as raising productivity for every worker in BCC by 9%.

    - The mobility of BCC residents could be improved to help lower skilled residents reach employment opportunities outside the BCC area.

    - Local residents could be upskilled to better align local demand and supply conditions.

22. The second element to consider when considering the stock of skills in Belfast is the demographic composition of the available labour. Within BCC there are considerable differences in qualifications between different age groups. **With higher qualified younger people and less qualified older people, the stock of skills will gradually improve as people with low-level qualifications retire**.

Underachievement in schools

23. **One method to improve the stock of skills in Belfast over the long-term is to stem the flow of people with low qualifications entering the labour market**. The data for BCC's school leavers is concerning. In BCC 61.5% of school leavers achieved at least five GCSE's A*-C (including English and maths). This is below the NI average (67.7%) and is the lowest proportion of the 11 NI LGD's.

24. Tackling low achievement (defined as not achieving 5 GCSEs including English and maths) in school is a significant spatial challenge. **Low education achievement is geographically concentrated**, and BCC contains a disproportionately large number of low achieving areas. For example, 13% of the wards in NI are in BCC. However, 26% of the wards in the lowest performing quartile are in BCC, and 52% of the wards in the lowest performing decile are in BCC.

25. Addressing this challenge is particularly difficult as education performance is not just determined by factors within schools. It is influenced by multifarious economic and social factors outside the school environment.

Literacy and numeracy

26. Given the importance that employers put on literacy and numeracy skills the mix of GCSE subjects is worth consideration. In BCC 79.0% of school leavers achieve at least five GCSE's, yet only 61.5% achieve at least five GCSE's including English and maths. In other words, **there is a significant number of school leavers who achieve NQF level 2; however, they have not achieved the key subjects of English and maths**. This will cause labour market challenges as many jobs,

education courses and employment programmes (e.g. Higher-level Apprenticeships) require English and maths for access. Many school leavers who fail to achieve English and maths will end up re-sitting these qualifications in another setting such as FE institutions.

Social and economic influences on education performance

27. The list of causal factors influencing a child's education performance is too long to discuss in detail in this report. However, bi-variate correlation analysis undertaken in this research highlights significant relationships between a number of factors and education performance:

    - **Intergenerational transfer of low skills:** There is a high correlation between areas where a high proportion of school leavers are failing to achieve at least 5 GCSE's including English and maths, and the skills of the 25-64 population. This suggests that there is an increased probability of low achievement at school where parents' highest level of qualification is relatively low.

    - **Socioeconomic status:** There is a strong correlation between socioeconomic indicators such as free school meal entitlement and employment deprivation and school performance.

    - **Aspiration in high deprivation areas:** A high number of small areas within BCC perform poorly with regard to participation in HE (using the proportion of 18-21 year olds not enrolled in HE course at HE or FE as a measure of HE participation. Of all SOA's in NI, 19% are in BCC. However, 38% of the SOA's in the quartile with the lowest HE participation are in BCC, and 53% of the SOA's in the lowest performing decile are in BCC. The participation of young people in HE in small areas also correlates significantly with the qualifications of qualifications of the 25-64 year old population. This data highlights a lower participation rate in areas where adult skills are low, suggesting that low adult skills in an area can negatively affect the education aspiration of young people in that area.

    - **Family structure:** There is a statistically significant relationship between the proportion of births to lone parents and school performance, with lone parents likely to be low achievers relative to other family types. Lone parents are a particularly vulnerable group and areas with a high proportion of lone parents tend to correlate significantly with a number of indicators relating to poverty.

28. These factors reinforce each other, which contributes to the geographic concentration of low achievement in discrete areas within BCC. There is no single policy initiative that will solve the spatial concentration of skills deficits within BCC. Therefore, **a multi-agency locally focussed response is required. Without a recognised panacea to address this issue there is scope to test pilot initiatives**. With high concentrations of underachievement in relatively small spatial units new approaches can be tested and rolled out to other locations if there is evidence of a demonstrable positive impact.

Effectively using data to identify areas for targeted support

29. The literature and data available highlight that there are children in households with particular types of characteristics that are more likely to fall behind in the early years of their education.

30. The bi-variate correlations undertaken in this report illustrated relationships between socioeconomic variables and academic achievement. Using socioeconomic data alongside unpublished administrative data (household income, households with out of work adults etc.), it is possible to identify areas where schoolchildren have a higher probability of low achievement and **intervene early with targeted support to tackle learning barriers**.

Recognising the importance of the home-learning environment

31. The literature reviewed in this research has highlighted that the **home learning environment is arguably a stronger influence on a child's education performance than the school environment**. There is evidence which outlines the positive impact programmes have had which aim to train parents how to teach their children literacy skills[44].

32. The evidence on parenting raises challenging issues from a policy perspective. Parents matter a great deal in their child's education. They influence academic achievement in the resources they provide, the way they raise their children and their aspirations for them. Many will be uncomfortable both with the state determining what makes for a good parent, and with the state telling parents how to parent. However, there are less reservations with the state determining what makes a good teacher or an effective school. Taking into account the convincing evidence that the home-learning environment matters more than school for a child's development **it must be acknowledged that many of the factors affecting a child's academic progress are outside the control of schools and may require a different approach.**

School influences on education performance

33. There are a number of factors inherent in the structure of the NI school system and within individual schools that affect pupil performance. It is beyond the scope of this study to undertake an analysis of either. However, empirical literature concludes that a number of features of schools contribute to an overall improvement in academic performance including financial resources (especially for disadvantaged pupils)[45]; accountability (e.g. inspections)[46]; autonomy[47]; school leadership[48]; and the degree of school choice available to parents and children[49]. There are some areas of

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[44] Senechal, M. and Young, L. (2008) The effect of family literacy interventions on children's acquisition of reading from kindergarten to grade 3: A meta review. *Review of Education Research*

[45] Gibbons, S. and McNally, S. (2013) *The effects of resources across school places: A summary of recent evidence,* CEP Discussion papers, CEPDP1226, London: Centre for Economic Performance, London School of Economics and Political Science.

[46] Gibbons, S. and Machin, S. (2003) Valuing English Primary Schools, *Journal of Urban Economics* 53: 197-219

[47] Machin, S. and Silva, O. (2013) School structure, school autonomy and the tail, CEP special report, London: Centre for Economic Performance, London School of Economics.

[48] Brandy C. Sirchia Huguet, (2017) "Effective leadership can positively impact school performance", On the Horizon, Vol. 25 Issue: 2, pp.96-102.

[49] Allen, R. and Burgess, S. (2011) Can school league tables help parents choose schools? *Fiscal Studies* 32(2): 245-261.

improvement within BCC. A potential future project could be a best practice review of schooling, with more detailed study of schools which have recorded improved results.

34. Academic selection is a contentious issue in NI, and this report has not studied the pros and cons of a selective education system in detail. However, it would be remiss not to flag the large discrepancy in achievement between and grammar and non-grammar schools. Almost all (95%) school leavers in NI from grammar schools achieve at least five GCSE's A*-C including English and maths, compared to less than half (48%) in non-grammar schools). There are also large differences between grammar and non-grammar schools with regard to the school intake. Grammar schools have a much lower proportion of enrolled pupils entitled to free school meals (14%) compared to non-grammar schools (39%). **The differences in school intake alongside drastically different levels of performance have clear implications for social mobility.**

35. The empirical evidence overwhelmingly supports the notion that academic selection does not improve academic outcomes for the average student. Evidence from Norway[50], Sweden[51] and Finland[52] (which all moved from a selective system to a comprehensive system) highlights the beneficial effects on average attainment and particularly strong positive effects for lower socioeconomic groups. Major reforms in Poland's school system helped to dramatically reduce performance variations amongst schools while at the same time increasing overall performance[53]. The key message is that **countries do not have to sacrifice high performance to achieve equity in education opportunities**.

36. A difficult aspect of this policy debate is that people often confuse the positive effects of attending a grammar school from the overall effect on education attainment from having a selective system compared with a comprehensive one. In other words, people often fail to consider the impact of a selective system of those who fail to get into a grammar school and the cost associated with a lower probability of attaining the minimum standard of education expected by the end of compulsory schooling.

Professional and technical skills

37. The NQF profile of qualifiers in FE colleges is weighted towards low-level qualifications. BCC has the highest proportion FE qualifiers achieving a highest level of qualification NQF level 2 and below. Only one-tenth of FE qualifiers achieve a qualification higher than NQF level 3, demonstrating the **limited supply of people studying higher level vocational qualifications focussed on professional and technical skills**.

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[50] Aakvik, A., K. G. Salvanes and K. Vaage (2010) "Measuring heterogeneity in the returns to education using an education reform", European Economic Review, 54, pp. 483–500.
[51] Meghir, C. and M. Palme (2005), "Educational reform, ability and family background", American Economic Review, 95:1, pp. 414–424.
[52] Pekkala Kerr, Sari, Pekkarinen, Tuomas and Usitalo, Roope, (2013), School Tracking and Development of Cognitive Skills, Journal of Labor Economics, 31, issue 3, p. 577 – 602.
[53] Wes, M. Rzeczpospolita, C.B. (2016) Poland's Education system: Leading in Europe. World Bank.

38. Higher level professional and technical skills are important from an economic perspective. Labour demand and supply in BCC appears to be misaligned with a shortage of people with qualifications at NQF level 3-5 entering the labour market.

39. In most other OECD countries a much higher proportion of students enrol in these types of courses compared to NI, and they are valued by firms and students as highly as university qualifications. In NI (and the UK) parents, teachers and students seem to view professional and technical qualifications as lower status than degree qualifications. This leads to students not considering an FE path when making decisions related to their tertiary level education, which contributes to mid-level skills shortages. **There are clearly efforts required to change these perceptions**, and make young people aware of the higher-level options available to them in FE, and the potential economic returns associated with each course offering.

Training programmes

40. BCC has high participation rates in training programmes such as Training for Success and Steps to Success. This is unsurprising as the former relates to low-skilled 16-17 year olds and is a direct effect of BCC's relatively high levels of underachievement in schools. The latter is a compulsory programme for long-term unemployed people, and participation rates will naturally be higher in areas where unemployment is higher.

41. The number of participants on these programmes is of a sizable scale and often overlooked. There is also some evidence of participant recycling on the programme with people who had previously participated re-joining the programme. The cost of delivering such programmes is significant, and the evidence of successful labour market outcomes is mixed. **The high number of participants on such schemes is considered a legacy cost directly linked to the long tail of underachievement in NI schools.**

Higher Education

42. **The participation of young people in HE in BCC is the lowest of NI LGD's by a considerable margin**. Given lower levels of academic achievement in school this is unsurprising. Participation rates in relatively deprived communities in BCC are particularly low. There is a troubling relationship between participation in HE and the skills of the 25-64 population, whereby very few young people participate in HE in areas with very low levels of adult skills. This is a pattern which policy should seek to break.

Graduate subject diversity

43. **A relatively high proportion of BCC's graduates are in narrow unspecialised subjects**. It is estimated that over the coming decade over one quarter (26%) of graduate demand will be for qualifiers in STEM related subjects (maths, computing, engineering and technology), yet only one tenth (10%) of BCC graduates qualify from these subjects.

44. There is high growth forecast in a number of specialised sectors/occupations that directly link to degree programmes. It will be important to ensure that supply of

graduates is adequate to meet this demand in high growth sectors such as ICT, and to ensure school performance in linked subjects (i.e. STEM) is of a level to enable new university entrants to access degree courses requiring STEM skills.

45. Ensuring quality careers information as early as possible relating to the benefits of STEM is an important step to encourage more people to study STEM subjects. Often certain STEM courses have entrance criteria linked to certain subjects at A-level. Therefore, it is **important to communicate accurate careers information to publicise the benefits of STEM subjects as early as possible.**

46. Aside from providing more degree subject options being available to new university entrants, studying STEM subjects at A-level can also contribute to better labour market outcomes. A recent study found that pupils who achieved a single STEM A-level (possibly amongst others) achieved a wage return of 20% from doing so, the return for those achieving at least 2 A-levels not including a STEM subject was just 5.3%[54].

47. As a wider point, education policy should aspire to deliver world-class careers advice in schools as early as possible. **Pupils should be provided with all the available labour market information in order to make informed career choices (e.g. a careers information portal)**. When choosing degree subjects pupils should at least have an awareness of the number of job opportunities related to their degree before choosing a degree subject.

Employability skills

48. The 2017 CBI/Pearson education and skills survey highlighted that in NI more than four in five local businesses expect to hire high-skilled roles in the next three to five years; but only three in every ten companies (29%) are confident of having the supply of talent they need to fill them[55].

49. This is a common complaint amongst employers, and **the numbers of employers consistently reporting a lack of basic employability skills amongst graduates is concerning**. Fewer students working in part-time jobs may explain part of this[56] or a lack of work based learning within degree programmes.

50. The 2015 Employer Skills Survey (ESS) highlighted that many firms found people skills lacking amongst applicants. The main skills listed as lacking amongst applicants included an ability to prioritise their own tasks (47%); customer handling skills (41%); managing or motivating other staff (40%); sales skills (37%); and team working (36%).

51. There is a legitimate argument that it is not solely the role of education institutions to provide students with these type of workplace skills. Instead, some responsibility should be on employers to adequately train their staff to ensure they have adequate

[54] Conlon, G., and Patrignani, P. (2015) 'The earnings and employment returns to A-levels', London Economics.
[55] CBI/Pearson (2017) Helping the UK thrive; CBI/Pearson Education and skills survey
[56] UKCES (2015) The death of the Saturday job. The decline of learning and earning amongst people in the UK.

skills for their workplace. **Improving the soft skills of graduates should be a shared responsibility between education providers and employers.**

52. Many of the competencies and behaviours demanded by employers are difficult to develop outside of a real workplace. For example, attitudes towards work, including taking responsibility, meeting deadlines, and knowing how to act in a given situation. In the classroom, efforts should be made to simulate the work environment through use of solving applied problems that frequently occur in the workplace. If employers want to help shape the skills of the supply of graduates in degree subjects related to their business it can be achieved by developing relationships with education providers and contributing to course design.

53. More than half of firms in the CBI/Pearson survey stated that poor careers advice is a major cause of skills shortages in the NI economy. Over 80% stated that they would be willing to play a greater role in supporting careers advice in schools and colleges. **With such a high proportion of employers stating that they are willing to make a positive contribution towards helping students make good choices, it suggests that there is further scope for initiatives such as course or module co-design.**

Work placements

54. Higher participation in HE has created a large group of labour that is relatively homogenous in nature. Recent graduates have relatively similar levels of school achievement and degree classifications awarded have skewed upwards over the past twenty years. For example, of the first degrees awarded in 2017, 23% were awarded first class honours compared to just 7% of a smaller cohort in 1997. Similarly, in 2017 the proportion of first degree qualifiers achieving a third class/pass degree classification was just 2.9% compared to 11.2% in 1997.

55. **With high numbers of qualifiers with relatively similar CV's it is important to stand out from the crowd**. To compliment degree level qualifications employers also expect students to possess wider employability skills. The most effective way for students to improve their employability skills is to undertake a work placement.

56. **The evidence that a placement year improves employability opportunities is strong**[57,58]. Indeed, a lack of work experience is a key barrier to your people, including graduates, in securing employment. Many recruiters also consider that hiring candidates who have proven their abilities during a placement to be a more reliable way of employing graduates[59].

57. The widening of participation in HE and limited placement opportunities amongst local employers leads to many students being unable to secure a work placement. There is a need to increase the number of work placements to effectively align the supply and

[57] Mason G., Williams G. and Cranmer S. (2006) 'Employability skills initiatives in higher education: what effects do they have on graduate labour outcomes?' London: National Institute of Economic and Social Research
[58] Hall M., Higson H. and Bullivant N. (2009) 'The role of the undergraduate work placement in developing employment competences:Results from a five-year study of employers' Aston Business School, Birmingham
[59] High fliers (2018) The graduate market in 2018

demand for placements. Therefore, universities need to engage with employers to develop solutions on how best to achieve this.

Plan for success – but have a back-up plan

58. Although it is advised to plan the supply of skills based on the economy policy seeks to achieve, it is also important to be cognisant of the potential for oversupply. If the BCC economy were to experience a recession, stagnant job growth or a sector shock there is a potential for an oversupply of graduates. Therefore, it is **important to have measures in place to mitigate the potential for an oversupply of skills** (e.g. conversion courses for workers made redundant, training rights for young people unable to secure employment after graduation etc.).

Consider the links to wider policy

59. There is a clear mismatch between the skills of a significant proportion of the BCC population and the skill demands associated with the types of jobs created in BCC. Therefore, it is likely that BCC will remain reliant upon being able to import skills from other LGD's. This has implications for transport planners, as high job growth in sectors such as ICT and professional services will likely lead to increased commuting and congestion. Therefore, over the medium term it will be important to strengthen connectivity to Belfast and consider measures to reduce congestion. Over the longer term, upskilling BCC residents and encouraging more high skilled labour to live in BCC could help relieve pressure on the transport network.

Adapt to labour market change

60. The modern labour force is currently undergoing a period of transformational change, with some occupations being vulnerable to skills biased technological change. This change highlights the **importance of continued lifelong learning to enable greater occupational mobility within the NI labour market**. A critical question is if lifelong learning opportunities are accessible to all, and understanding what barriers exist.

61. There are also many people within the existing labour market who have a low level of qualification, yet are highly skilled. In other words, **people employed have accumulated skills on the job but do not have a qualification on the NQF framework to recognise their skill level**.

62. This is an important aspect to consider in the local labour market. There are many people still participating in the labour market over 50 who entered into employment when there was a much lower emphasis on formal qualifications. While a lack of formal qualifications may not be an issue for an older worker who has worked for the same firm for many years. If that person were to become unemployed, they may face challenges in obtaining suitable employment, and would encounter similar difficulties if attempting to move between jobs.

63. Validating formal and non-formal learning strengthens individual's incentives to invest in training, helps to promote job-to-job transitions, and can reduce the incidence of under-qualification. **A recognition of prior learning would strengthen the**

signalling power for individuals who are highly skilled but poorly qualified due to the labour market conditions at the time they left the formal education system.

Lifelong learning

64. It is important to recognise that public resources for skills, education and training are finite. Key target groups should be young people (particularly those who are out of work), people with low skills currently excluded from the labour market who would 'like to work' and workers with low level skills who have not continued to advance their skills over the life course through training or other lifelong learning methods. **Addressing changing skill needs in the economy is essential to shield workers with low skills from the negative effects of job loss and structural change.**

65. Upskilling poorly qualified parents can be effective on two fronts. Firstly, by improving employment prospects for out of work adults and occupational mobility for in-work adults. Secondly, an improvement parent's skill levels has a positive impact on children's school performance.

66. The number of individuals receiving accredited training that moves them up the NQF scale is relatively small. In addition, rising participation in non-standard working arrangements creates a need for learning incentives not directly tied to one's job. For example, France grants training leave rights to individuals which are preserved upon job loss and transferrable between employers.

67. Although lifelong learning should be encouraged for all, from a public resources perspective, it is likely that the **returns to education are much higher amongst younger people compared to older people.** International evidence highlights that other countries are making effective use of the available administrative data as an evidence base to ensure better value for money on training initiatives relating to the unemployed. For example, Ireland introduced a statistical profiling tool call PEX (Probability of Exit). It estimates the probability that jobseekers will exit unemployment within one year based on a model using a wide range of economic and social indicators. Claimants with the lowest probability of exit are then selected for more intensive or more active case management.

Fiscal considerations

68. There is a clear causal link between social inequality and educational achievement, with the relationship being particularly strong when the data is analysed using small geographies such as wards and SOA's. **If public policies do not deal directly with the root causes through education and skills formation the cost of redistributive policies like taxes and social transfers (i.e. unemployment, training and out of work sickness payments) is likely to be much higher in the long run.**

69. The OECD[60] estimated that the economic gains that would accrue solely from eliminating extreme underperformance in high-income OECD countries by 2030 would be sufficient to pay for the primary and secondary education of all students.

[60] OECD (2015) Universal basic skills: what countries stand to gain.

Therefore, any underinvestment in skills against a backdrop of short-term fiscal constraints can be shortsighted and ignore the potential long-term return on investment.

Quantifying the true cost of underachievement in school

70. Research has not been undertaken in NI to identify the true cost of the long tail of underachievement in schools. Calculating such a cost is multi-faced comprising lost potential with regard to opportunity cost, and a fiscal cost associated with underachievement.

71. **Under achievement is likely to lead to a significant fiscal cost across a range of public policy interventions**. Firstly, low achievers are likely to be tied up in the education and training system for a number of years at significant public cost. They are also much more likely to become workless and generate a cost via out of work benefit payments.

72. Considering BCC's relatively poor performance on most skills indicators and having pockets within BCC associated with very high levels of worklessness it is likely that the cost of underachievement is disproportionately high in BCC. Further research to quantify the cost of this would be beneficial to begin a public conversation on how we can best tackle this critical issue, which ultimately leads to a diverse range of economic and social inequalities over a person's lifetime.

More effective use of longitudinal data

73. Using longitudinal data can also provide clarity on the effectiveness of courses. Better tracking the education journey of learners through all stages the education system can provide huge policy insights.

74. For example, numerous research articles have highlighted the negative consequences of grade repetition in schools. Enrolment data in FE suggests a version of this occurs in the post-secondary education system in FE colleges, with a recycling of students who undertake multiple courses without moving up the qualifications ladder. While the data indicates that this is likely to occur, there is no conclusive statistical evidence base. **By better tracking students throughout their entire education journey the effectiveness of their courses could be more effectively evaluated, and students course-to-course transitions could be better understood.**

Understanding learner outcomes from training schemes

75. Higher spending does not always translate to higher levels of achievement. For example, numerous publically funded training schemes are relatively ineffective at raising achievement.

76. **Data analytics methods such as data linking should be utilised to measure the value added of different courses/training programmes** (e.g. linking learners to tax records to monitor their labour market performance). The benefit of data linking methods using administrative data is that it enables data to be analysed on a longitudinal basis. For example, participants on training schemes can be tracked for a

period of years to ensure that after qualifying that they maintain their labour market participation and that their earning potential has increased. Crucially, this type of programme evaluation can identify if the same individuals reappear in other out of work training schemes at a later point.

Effective skills planning involves a coordinated approach

77. Many employers report difficulties finding workers with the skills they require, and a high share of adults are working in jobs that are not well matched to their qualifications. Skill imbalances can lead to lower earnings and job satisfaction at an individual level alongside stunted productivity growth and lower economic growth at a macro level. Therefore, effective planning of skill needs is of critical importance.

78. Skills modelling uses assumptions drawn from recent data relating to sectors and occupations. However, this approach assumes that the labour market is currently in equilibrium. In other words, the skills currently operating in sectors and occupations match employer demand.

79. Given this drawback to relying purely on quantitative data for skills planning it is **important to gather qualitative views from employers relating to skill needs**. This can take the form of a consultation exercise, or an independent body. For example, in Ireland the Expert Group on Future Skills Needs is an independent non-statutory body that includes representatives from the business community, education and training providers, trade unions, and a small number of Government Agencies.

Improving labour market intelligence in tertiary education

80. The need to better quantify student outcomes also applies to tertiary education. By linking student information to tax and benefit records it is possible to gain insight in a number of areas:

    - **Graduate underemployment**: There is some evidence of graduates being employed in non-graduate occupations in recent years. This could be either a demand side weakness or linked to the expansion of HE participation. This is an area requiring further research. Linking to tax records would provide insight that is currently unavailable from published data sources.

    - **Course value**: Earnings data available at the UK level highlights a diverse earnings profile across degree subject areas. Linking to tax records could potentially quantify differences in earning potential across degree courses.

    - **Returns to FE**: Currently very little data is available relating to the long-term returns to a qualification obtained in a FE institution. Tracking earnings in the years following the successful completion of a FE course could provide valuable data that would help to change perceptions amongst parents and students regarding FE. This would be a helpful addition to the available research and could help effectively communicate the positive economic outcomes associated with professional and technical qualifications.

81. The range of research possibilities from linking education data to tax records is almost limitless. The data gathered from this undertaking could inform careers information and improve student's ability to make informed career choices. The data could also be used to inform funding decisions. For example, in 2017 Estonia introduced a new funding model for HE based on performance with one of the assessment indicators being the labour market outcomes of graduates.

Understanding what works

82. With better, and more integrated, systems of data collection it should be possible to undertake a **meta-evaluation of all forms of public intervention relating to skills**. To effectively evaluate policy impacts a record should be developed which holds data on each individual, the assistance they received and the outcomes associated with the intervention. This approach will avoid the problem of double counting individuals who have participated in multiple education and skills initiatives. **Before any significant new interventions are introduced it is important to understand what has worked best within the publically funded education and skills system.**

The need for qualitative evidence

83. Quantitative evidence can only provide insight to a certain extent. **Qualitative data is required to provide a full picture of the skills environment within BCC**. For example, the voice of those outside the labour market often goes unheard. To actively understand labour market barriers amongst relatively recent qualifiers a 'big conversation' is required with the under 25's. This could include research amongst both young people outside the labour market and recent graduates to assess the level of underemployment within BCC.

Concluding remarks

84. This report has highlighted the importance of mid and high level skills if BCC is to achieve its economic ambitions. The analysis of the supply side highlights a divided city, with lagging performance across a range of indicators – particularly in inner city areas. There has been progress in a number of areas, but there is little evidence of convergence. As skills represents the most effective route out of poverty, tackling low performance in these 'left behind' areas must be a priority for a city with an inclusive growth agenda[61] to 'leave no one behind'.

[61] Belfast City Council (2017) The Belfast Agenda. Your future city. Belfast's community plan.

Annex A: Skill requirement's for tomorrow's economy – Baseline scenario

Baseline Scenario

1. The baseline is the economic scenario which directly links to the UUEPC economic forecasting model. **The baseline scenario is what UUEPC considers to be the most likely economic trajectory for the local economy**.

2. **The employment outlook in the baseline scenario is considerably lower than the high growth scenario presented in chapter three of this report**. The high growth scenario involved an increase in workforce jobs of 40.8k (2.1% per annum) compared to 15.2k in the baseline scenario (See figure 3.1). The largest differences between the two scenarios are in the information and communication and professional services sectors. Under the high growth scenario the information and communication sector creates 8.1k additional jobs between 2017-27, compared to 2.6k under the baseline scenario. The professional services sector creates 10.3k additional jobs under high growth scenario, compared to 3.4k in the baseline scenario (see table 3.1).

Demand for labour in BCC

3. While the net change in employment – technically termed expansion demand - is often more widely understood and 'visible' within the economy as a driver of future demand, it remains the case that, especially in the baseline scenario, future skills and employability demand will still be significantly determined by net replacement demand.

4. The table below summarises expansion and replacement demand forecasts for BCC over the 2017-27 period for the baseline and high growth scenarios.

Table A.1: BCC – Expansion and replacement demand (2017-27)

Demand category	High growth (2017-2027 per annum)	Baseline (2017-2027 per annum)
Gross demand	24,000	20,860
Expansion demand	3,540	1,400
Replacement demand	20,460	19,460
Filled from within the existing labour market	15,050	14,310
Net replacement demand	5,420	5,140
Net requirement from education and migration	**8,960**	**6,540**

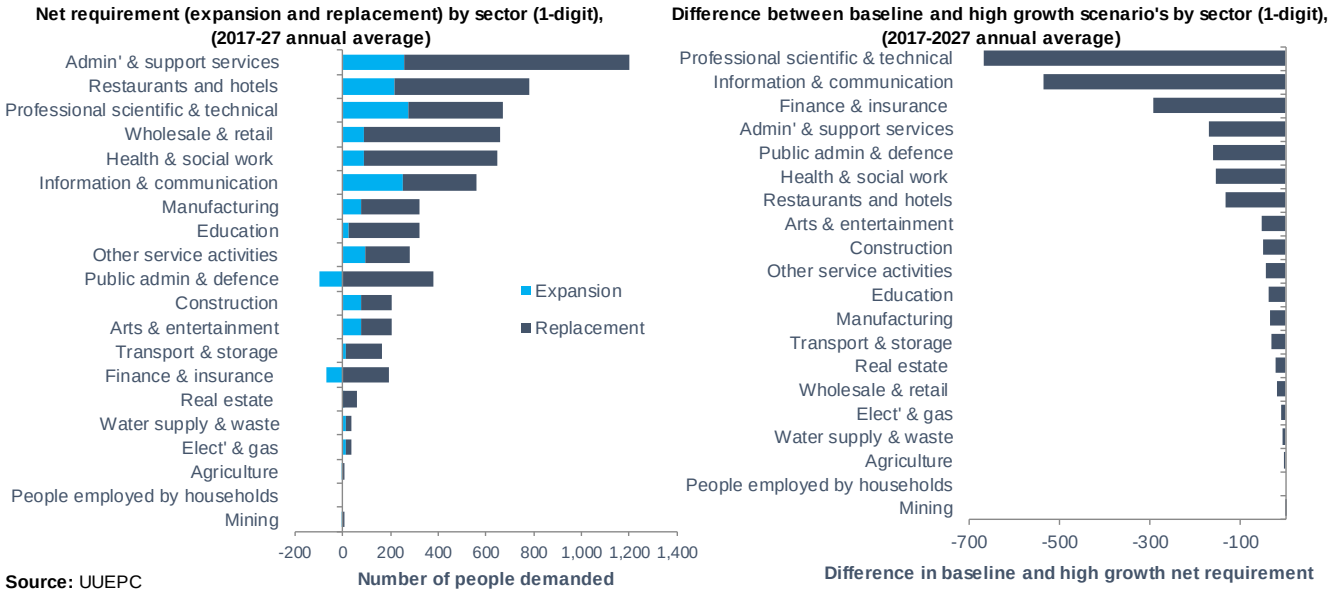
Source: UUEPC
Note: Data may not sum due to rounding.

5. As is illustrated from the table above, under baseline conditions with lower expansion demand, a larger component of labour demand comes from replacing workers who have left their position. **Under baseline conditions net replacement demand is forecast to be 3.7 times larger than expansion demand**. On average, over the 2017-27 period the annual net requirement from education and migration is forecast to be 2,410 lower compared to the high growth scenario.

Where will labour demand be concentrated

6. **Under the baseline scenario the sectors with the largest net requirement from education and migration are administration and support services (1,199 per annum) and restaurants and hotels (783 per annum)**. It is worth noting that relative to the baseline net replacement demand accounts for a higher proportion of overall demand across all sectors. The largest differences in the net requirement between the baseline and high growth scenario's is in the professional services and information and communication sectors.

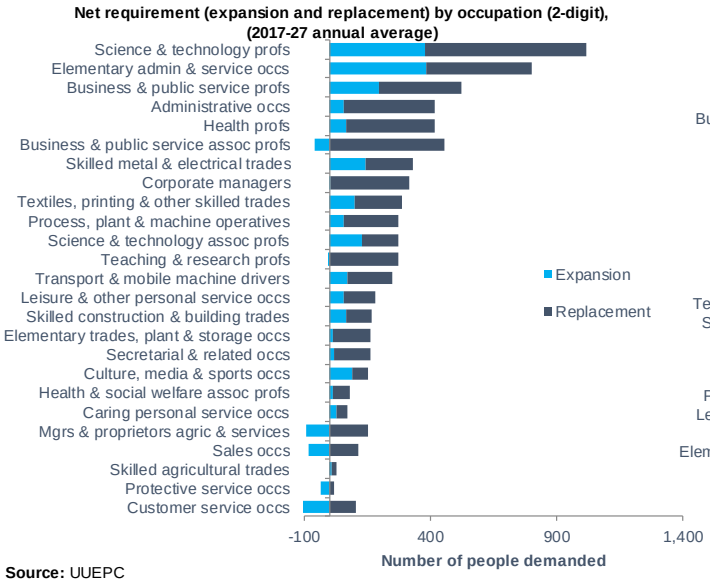
Figure A.1: BCC – Net requirement by sector, 1 digit SIC (2017-27)

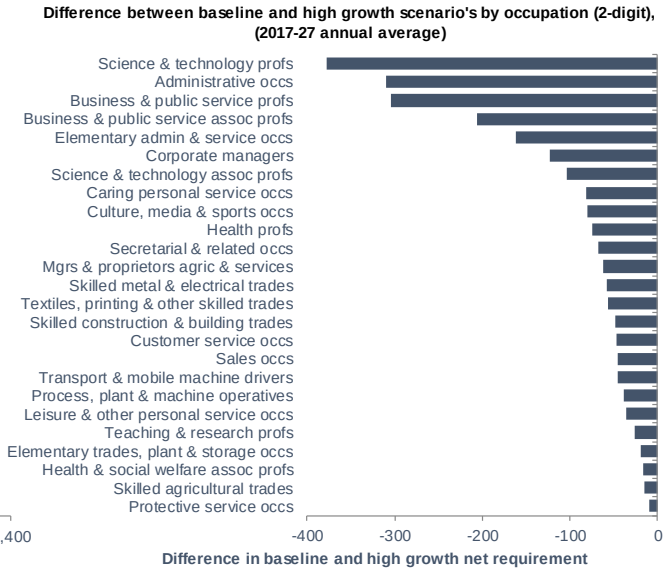


Source: UUEPC

7. From an occupation perspective, under baseline conditions the largest demand from the education system and migration is concentrated in science and technology professionals and elementary and administration service occupations. The largest differences are recorded in science and technology professionals (difference of -378 persons) and administrative occupations (difference of -309 persons).

Figure A.2: BCC – Net requirement by occupation, 1 digit SOC (2017-27)



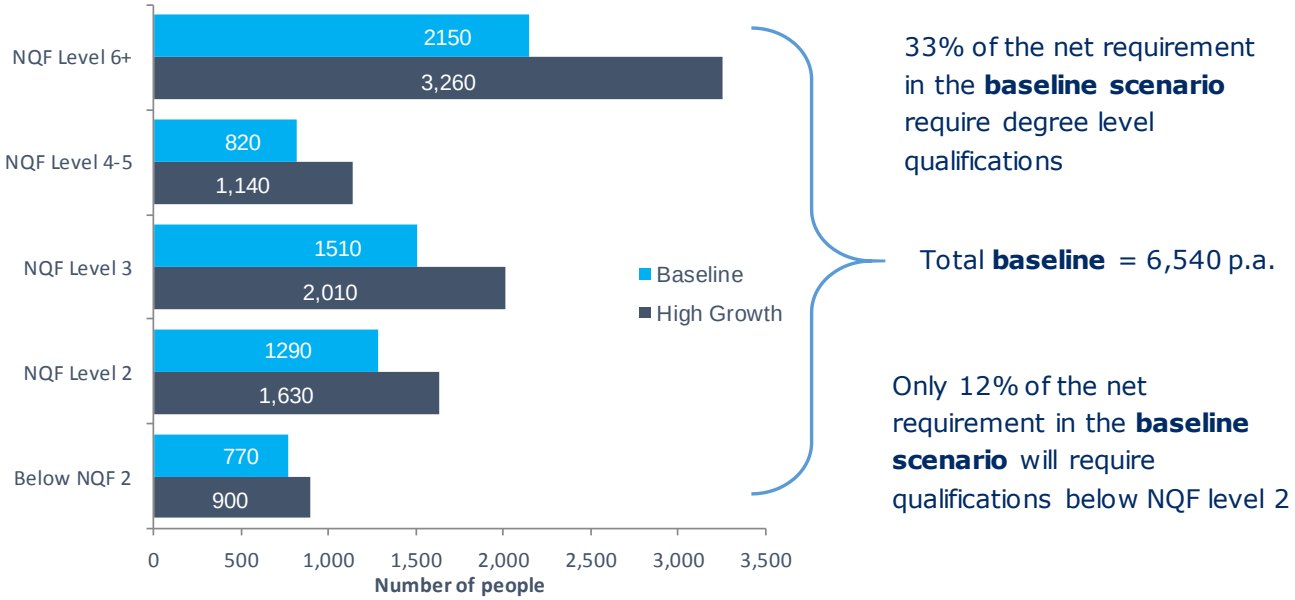


Source: UUEPC

The demand for qualifications

8. The figure below provides an overview of the demand for skills disaggregated by the highest level of formal qualification according to the NQF classification associated with the UUEPC's high growth and baseline scenarios.

Figure A3: Average annual net requirement for skills in BCC, baseline versus high growth scenario's (2017-27)



Source: UUEPC
Note: Data may not sum due to rounding.

9. **The profile of skills demand across the two scenarios is relatively similar**. For example, under the baseline scenario 33% of the net requirement is associated with qualifications at NQF level 6+, compared to 36% in the high growth scenario. However, in absolute terms there are 1,114 fewer people demanded at NQF level 6+ under the baseline scenario.

10. Similarly, although the proportions of people demanded with low level skills (below NQF level 2) are relatively similar under the baseline and high growth scenarios (12% and 10% respectively), **the absolute number of people demanded is 18% lower in the baseline scenario**.

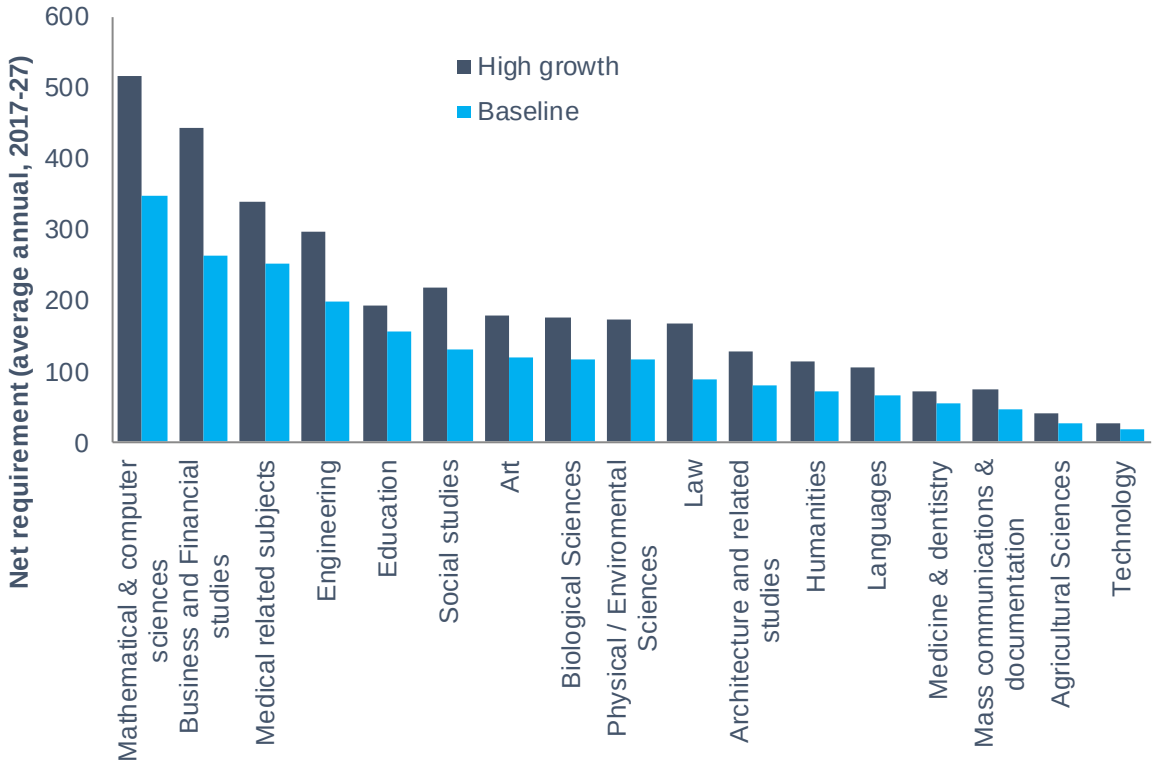
Subjects in demand

11. Using UUEPC's skills forecasting model it is possible to provide an indication of the subjects demanded in high skill occupations under baseline conditions.

NQF level 6+ (undergraduate and above)

12. Under baseline conditions, over the next decade **the largest subject in demand for NQF level 6+ degree programmes and above is mathematical and computer sciences** at 346 persons per annum, representing 16% of the NQF level 6+ demand. However, compared to the high growth scenario the absolute number of people demanded from mathematical and computer science degrees under this scenario is 49% lower.

Figure A4: Average annual net requirement for NQF level 6+ skills in BCC, 1 digit JACS (2017-27)



Source: UUEPC

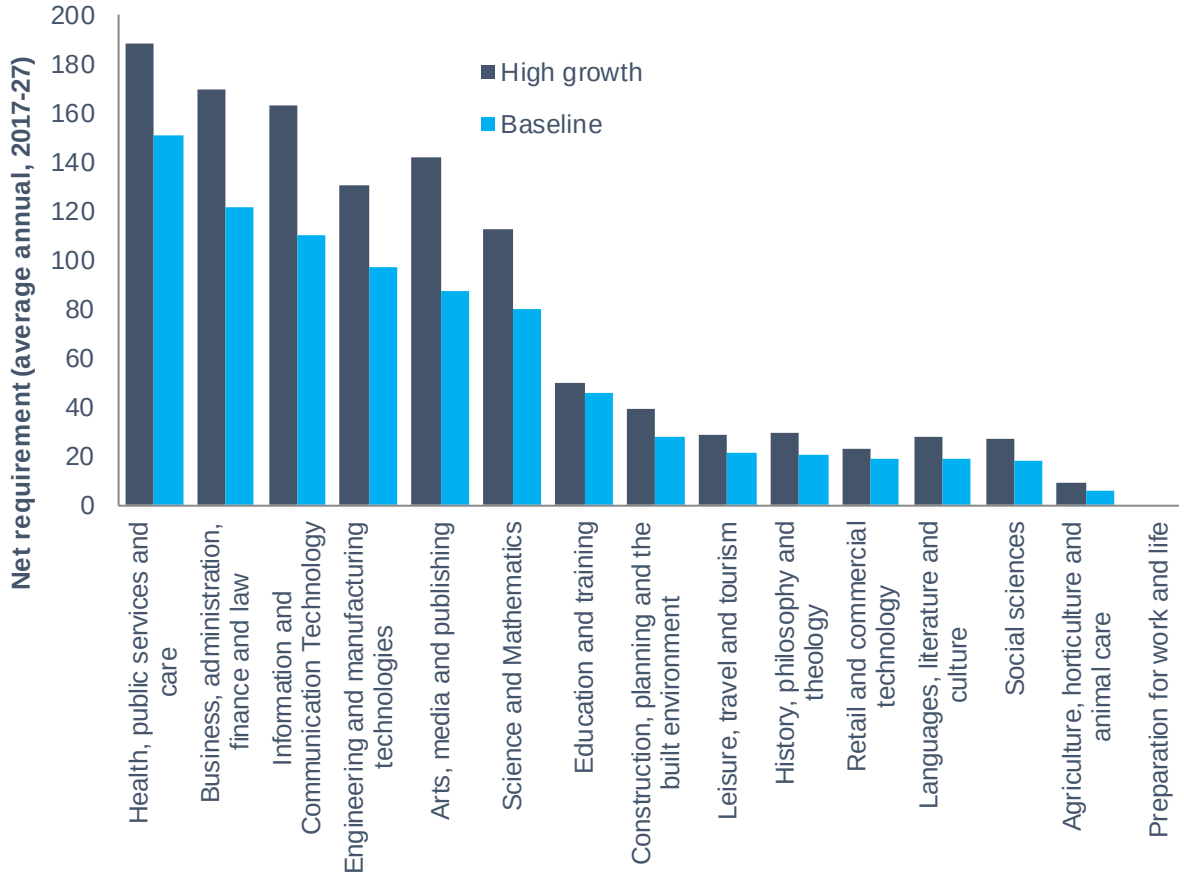
13. The remaining structure of the demand for NQF level 6+ subjects under the baseline scenario is: business and administrative studies (12%); medical related subjects (12%); engineering (9%); social studies (6%); art (6%); and others (32%).

NQF level 4-5 (Sub-degree level)

14. The figure below summarises the subject profile of demand for NQF level 4-5 qualifications in the BCC area.

15. Under baseline conditions, over the next decade **the largest subject in demand for sub-degree programmes at NQF level 4-5 is health, public services and care** at 151 persons per annum, representing 18% of the NQF level 4-5 demand. This is relatively similar to the high growth scenario as labour demand in the health sector is largely driven by replacement rather than expansion demand.

Figure A5: Average annual net requirement for NQF level 4-5 skills in BCC, 1 digit SSA (2017-27)



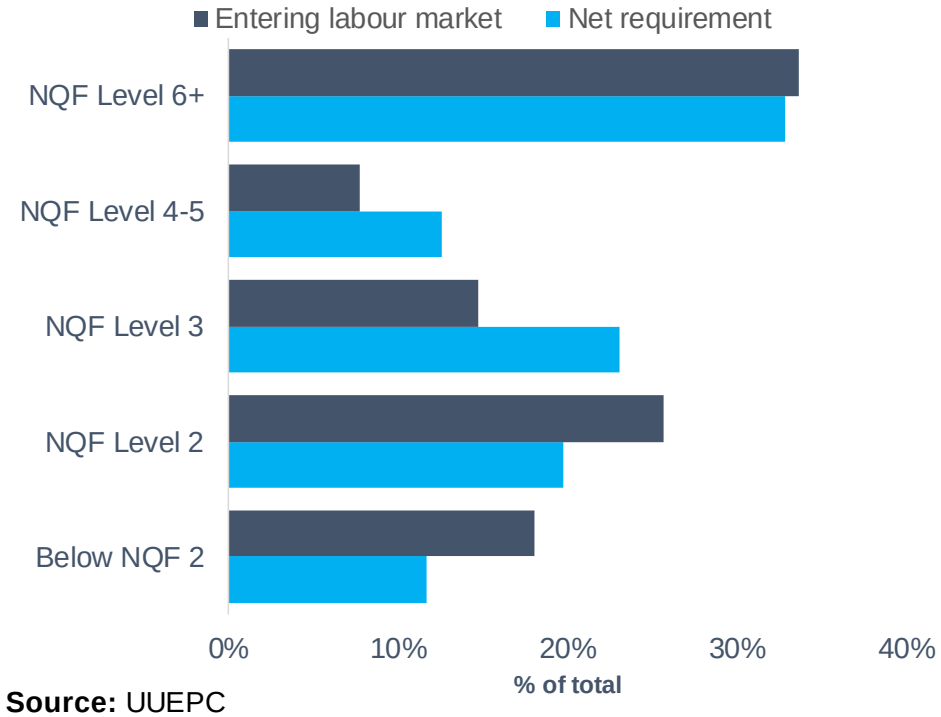
Source: UUEPC

16. The remaining structure of the demand for NQF level 4-5 subjects is: business, administration, finance and law (15%); information and communication technology (13%); engineering and manufacturing technologies (12%); art, media and publishing (11%); science and mathematics (10%); and others (21%).

Demand and supply balances

17. The figure below presents the distribution of BCC residents entering the labour market and the net requirement under the baseline scenario.

Figure A6: Net requirement vs skills profile of labour market entrants, BCC, (2017-2027)



Source: UUEPC

18. Areas of misalignment appear to be an **oversupply of low-level skills at NQF level 2 and below**. This finding is consistent with the relative underperformance of BCC residents at school and the relatively high proportion of residents studying low NQF level courses in FE and through training courses.

19. There is also a **shortage of mid-level skills at NQF level 3-5**. This is largely a supply driven issue with so few people studying qualifications at these levels who enter the labour market. The majority of people who gain qualifications at these levels proceed to further study. This results in a deficit of people with mid-level skills participating in the labour market

20. **There is a marginal oversupply of graduates, which compared to a marginal undersupply in the high growth scenario**. However, it is important to note that the above chart is simply measuring the distribution of the supply of BCC residents versus the distribution of demand. **In absolute terms there are 1.1k less graduates demanded in the baseline compared to the high growth scenario**. Therefore, an oversupply of graduates would be of a significant quantum.

21. In considering the subject profile of the NQF level 6+ net requirement there are some imbalances. The largest gaps exist in maths, computing, engineering and technology (-16 percentage points). This suggests that the **current subject mix is currently out of sync with the subject demand for high-level skills under the baseline scenario**.

Table A2: Distribution of current BCC qualifiers vs future net requirement for NQF level 6+

	% distribution of BCC qualifiers (2015)	% distribution of net requirement (2017 - 2027)	p.p. difference
Medicine, denistry, subjects allied to medicine	17%	14%	2%
Biological, veterinary, agricultural & physical sciences	11%	12%	-1%
Maths, computing, engineering and technology	10%	26%	-16%
Social studies & law	19%	10%	9%
Business, administration, mass communication and documentation	15%	14%	1%
All other disciplines	28%	23%	5%

Source: NINIS & UUEPC

22. However, it is important to remember that the table above is simply comparing the percentage distribution of the demand and supply of skills. Under baseline conditions, despite there being a clear difference in the subject distribution between the demand and supply, with a lower number of graduates demanded overall under baseline conditions there is unlikely to be a skills shortage in this area.

Interpreting the baseline

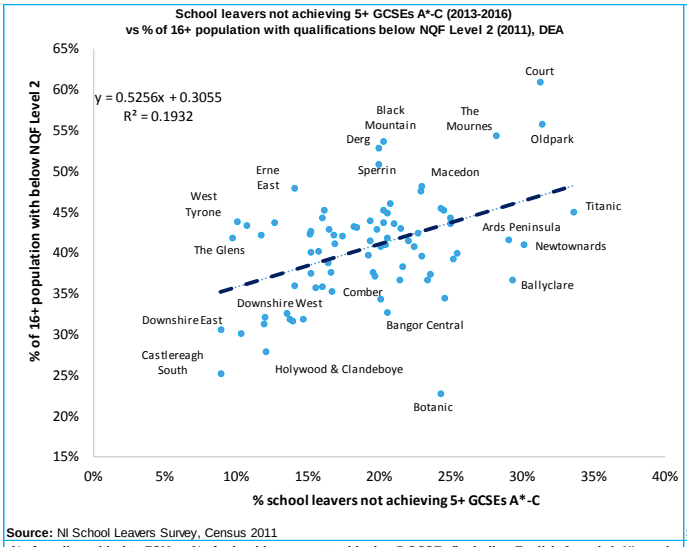
23. Although it is advised to plan the supply of skills based on the economy policy wants to achieve, it is also important to be cognisant of the potential for oversupply. If the BCC economy were to experience a recession, stagnant job growth or a sector shock there is a potential for an oversupply of graduates. Therefore, **it is important to have measures in place to mitigate the potential for an oversupply of skills** (e.g. conversion courses for workers made redundant etc.).

Annex B: Skills forecasting caveats

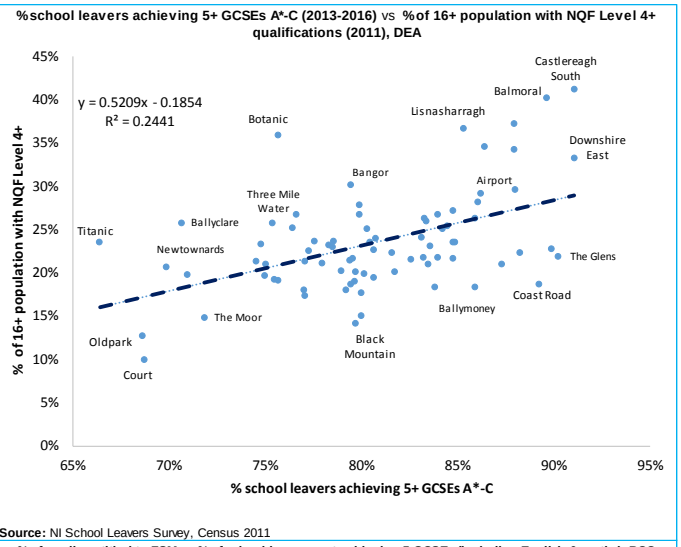
1. The caveats listed below are important to consider when interpreting the skills forecasting results from the empirical model used:

- **A challenging process** - Estimation of replacement demand involves an examination of the flows into and out of the labour market using complex LFS analysis. This type of flow analysis from official data is only possible at NI level (and even at this level is limited by sample size). NI replacement demand assumptions are applied to BCC. We do not expect significant differences from the NI pattern across local areas.
- **Labour market equilibrium -** By drawing assumptions based on past data we are implicitly assuming that the labour market is largely in equilibrium. In other words, it assumes the skill patterns in past data reflect the actual skill demand from employers. It may be the case that in past years inflows into the labour market from education have not always had a high-level formal qualification but that is not to say employers would not have liked or benefited from better educational standards. The opposite may also be true where employers recruit persons with higher qualifications than actually necessary, e.g. graduates in non-graduate jobs. In either of these two cases, using past data would not be a precise reflection of actual employer demand.
- **Labour market equilibrium –** Similar to the above point, the subject mix within sectors in past data may not always reflect employer demand. Employers in NI may be taking more general business & administration degrees when they would ideally like more advanced STEM subjects (say taking a business studies graduate when they might have preferred a maths graduate). Similarly, a STEM graduate may be working in a particular sector where the employer did not necessarily demand STEM graduate, rather a high quality graduate regardless of the degree subject.
- **Formal qualification measures such as NQF levels 1-8 do not cover all aspects of skill needs** – A limitation of this type of empirical skills forecasting exercise is that it only focuses on formal NQF qualifications and not other 'softer' key skill requirements such as experience, work readiness and generic skills. This is because these other skills lack comprehensive and robust data and are therefore difficult to quantify in a modelling framework.
- **Data disclosure –** The Census of Employment is the main source of employment data used relating to employment within BCC. In some years data is suppressed due to disclosure. In these instances we have quantified the suppressed data using estimation techniques.
- **A lack of sub-regional supply side metrics -** In sub-regions no data exists relating to the destination of leavers from FE and HE. Therefore, any data relating to the destination of leavers from HE or FE is based on NI level assumptions.
- **Comparability to NI Skills Barometer –** The NI Skills Barometer converts workforce jobs to employment in people based terms using a jobs to people ratio from the 2011 Census. This ratio is applied to all future years, then data is scaled to NI totals from more recent years using data from the LFS. For BCC no people based employment data on a workplace basis exists post 2011. Therefore, in BCC jobs to people ratios from the 2011 Census are applied to all years. The BCC skills study has also taken been undertaken in a different time period to the NI Skill Barometer. Therefore, the results from the two studies are based on separate economic scenarios.

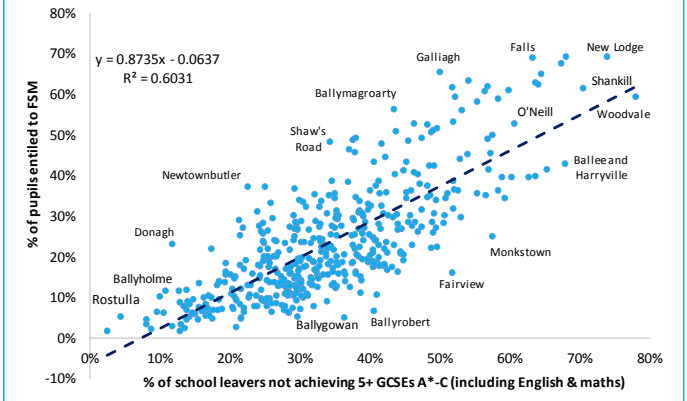
Annex C: Correlation analysis



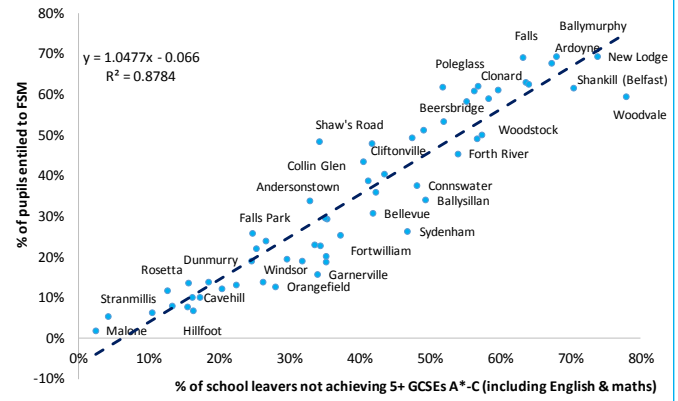
Source: NI School Leavers Survey, Census 2011



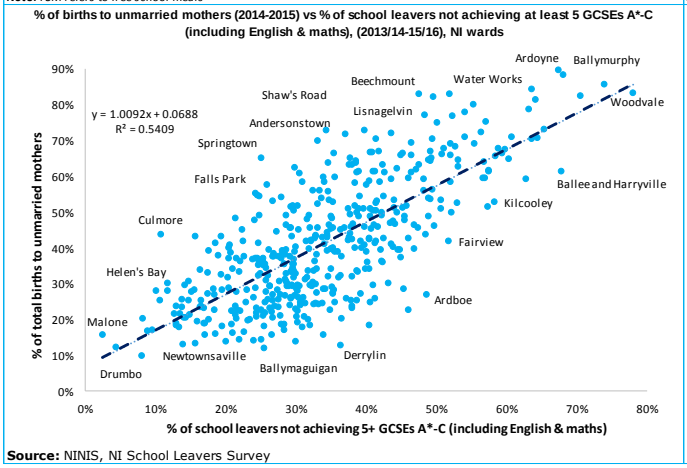
Source: NI School Leavers Survey, Census 2011



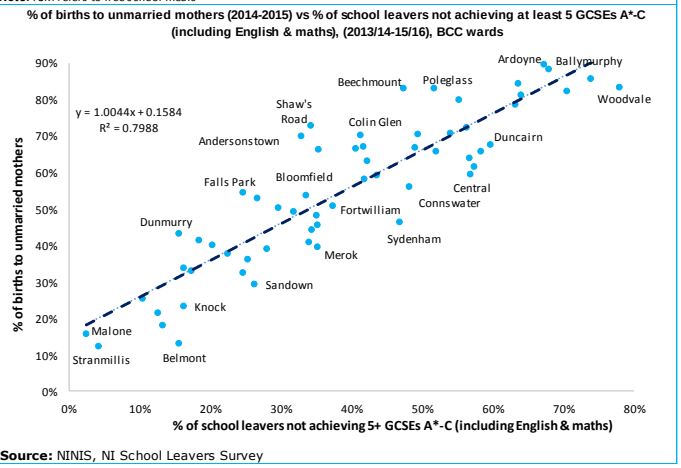
Source: NI School Leavers Survey, NI School Census
Note: FSM refers to free school meals



Source: NI School Leavers Survey, NI School Census
Note: FSM refers to free school meals

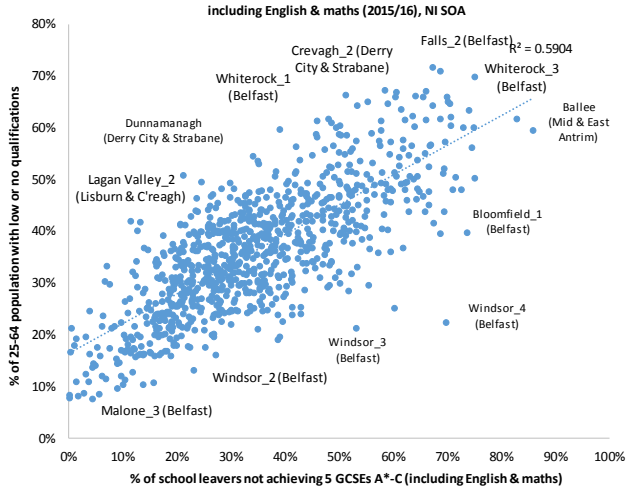


Source: NINIS, NI School Leavers Survey



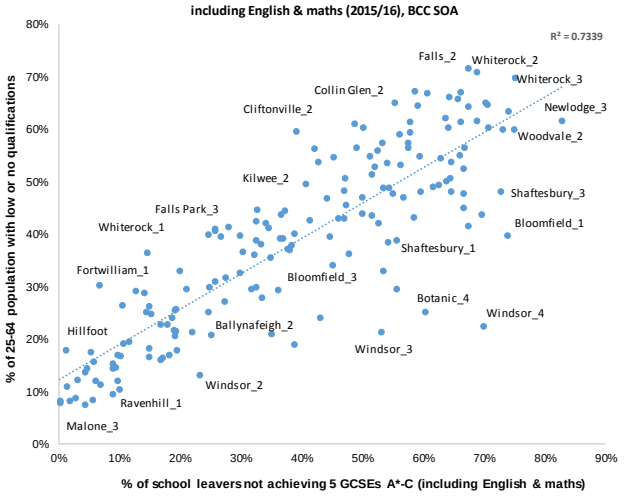
Source: NINIS, NI School Leavers Survey

% of 25-64 population with low or no qualifications (2011) versus school leavers not achieving 5 GCSEs A*-C including English & maths (2015/16), NI SOA



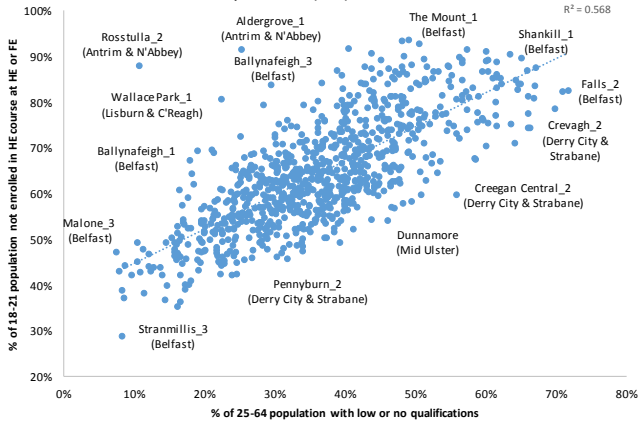
Source: NI Multiple Deprivation Measure

% of 25-64 population with low or no qualifications (2011) versus school leavers not achieving 5 GCSEs A*-C including English & maths (2015/16), BCC SOA



Source: NI Multiple Deprivation Measure

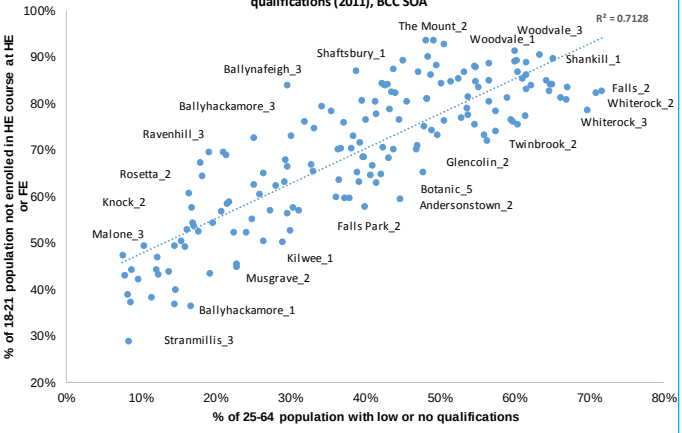
% of 18-21 population not enrolled in HE courses at HE or FE (2015/16) versus % of 25-64 population with low or no qualifications (2011), NI SOA



Source: NI Multiple Deprivation Measure

Note: *SOAs where no data is avilable have been excluded*

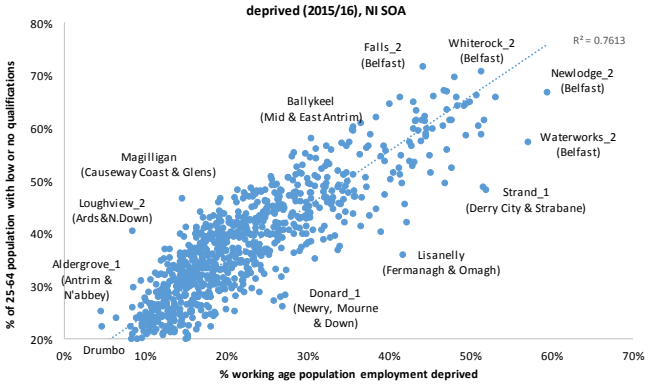
% of 18-21 popoulation enrolled in HE courses at HE or FE (2015/16) versus % of 25-64 population with low or no qualifications (2011), BCC SOA



Source: NI Multiple Deprivation Measure

Note: *SOAs where no data is avilable have been excluded*

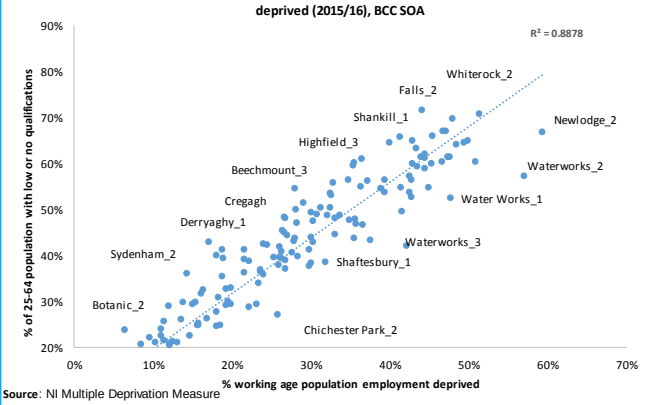
% of 25-64 population with low or no qualifications (2011) versus % of working age population employment deprived (2015/16), NI SOA



Source: NI Multiple Deprivation Measure

Note: *Employment deprived is defined as proportion of working age population who are in recipt of at least one employment related benefit, and individuals who are not in recipt of an employment related benefit, nor have received income from employment*

% of 25-64 population with low or no qualifications (2011) versus % of working age population employment deprived (2015/16), BCC SOA

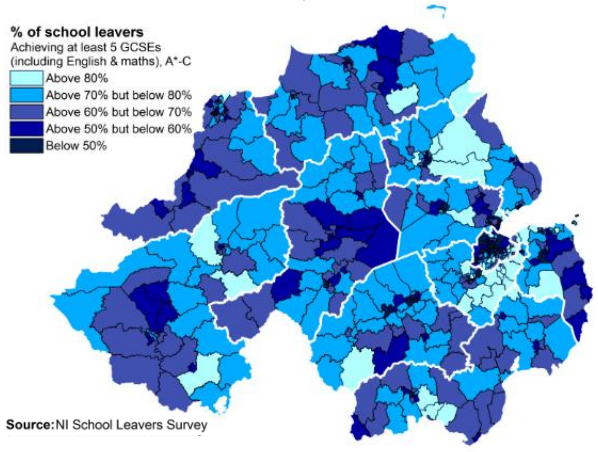


Source: NI Multiple Deprivation Measure

Note: *Employment deprived is defined as proportion of working age population who are in recipt of at least one employment related benefit, and individuals who are not in recipt of an employment related benefit, nor have received income from employment*

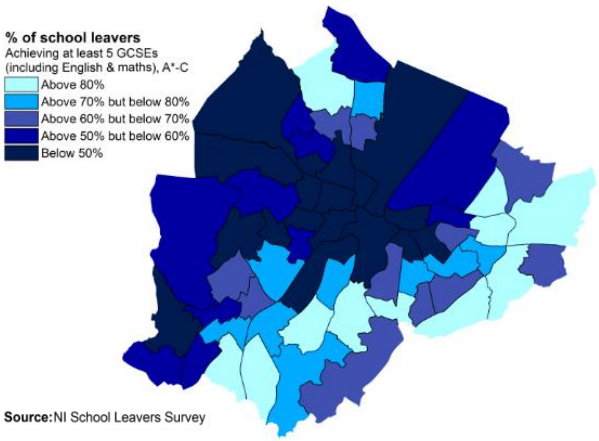
Annex D1: Achievement of school leavers, ward level analysis

School leavers (%) achieving at least 5 GCSEs including English & Maths, A*-C, NI wards, 2013/14 to 2015/16



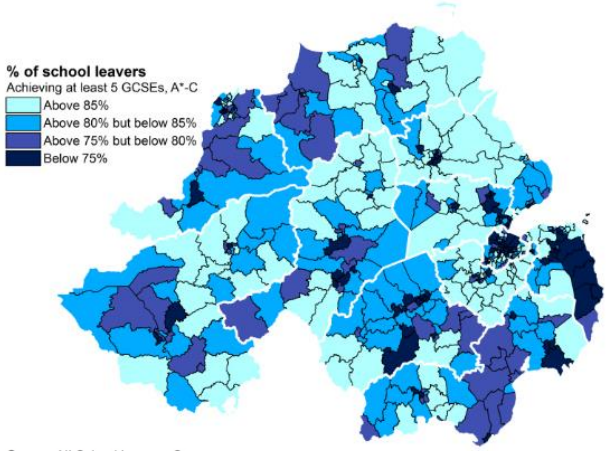
Source: NI School Leavers Survey

School leavers (%) achieving at least 5 GCSEs including English & Maths, A*-C, BCC wards, 2013/14 to 2015/16



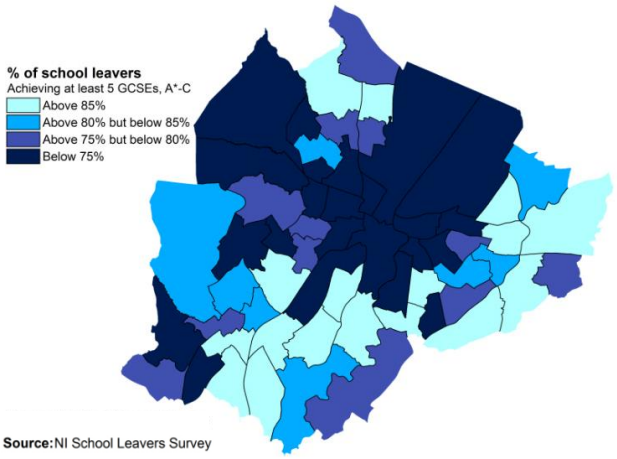
Source: NI School Leavers Survey

School leavers (%) achieving at least any 5 GCSEs A*-C, NI wards, 2013/14 to 2015/16



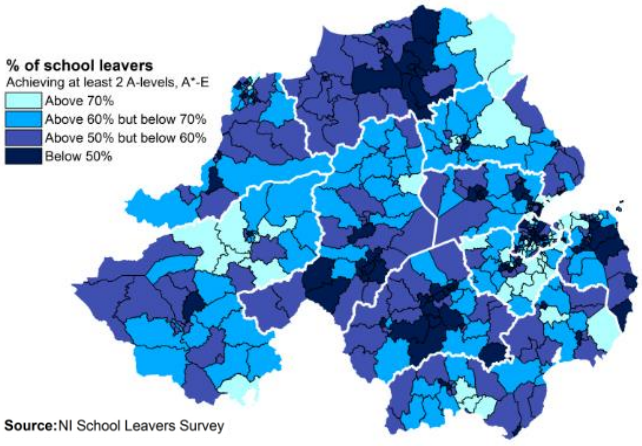
Source: NI School Leavers Survey

School leavers (%) achieving at least any 5 GCSEs A*-C, BCC wards, 2013/14 to 2015/16



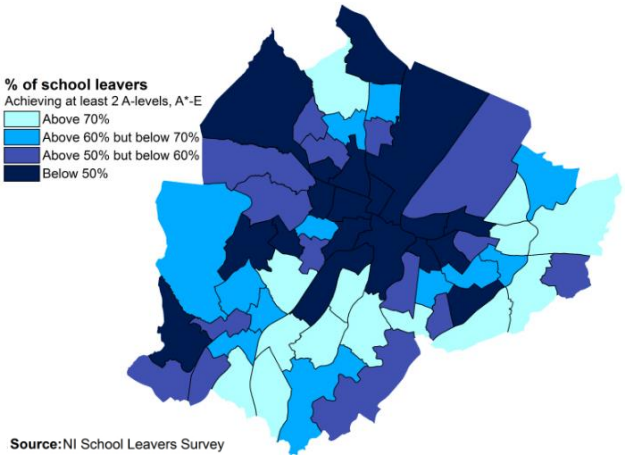
Source: NI School Leavers Survey

School leavers (%) achieving at least 2 A-levels A*-E, NI wards, 2013/14 to 2015/16



Source: NI School Leavers Survey

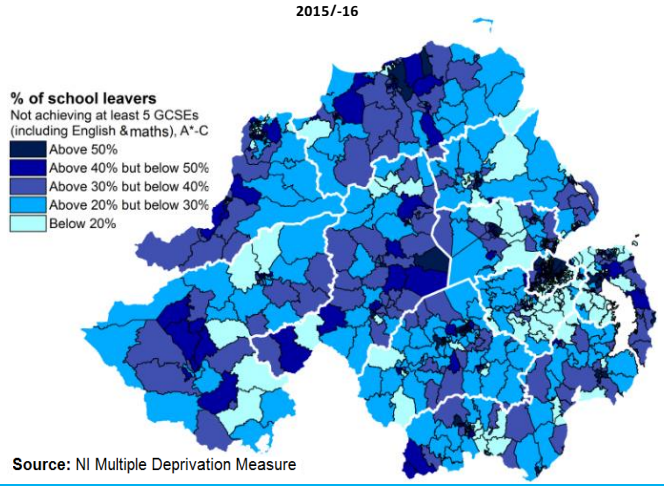
School leavers (%) achieving at least 2 A-levels A*-E, BCC wards, 2013/14 to 2015/16



Source: NI School Leavers Survey

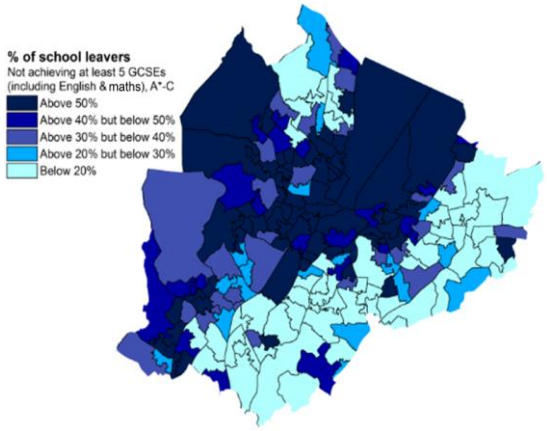
Annex D2: Youth in the NI skills system

School leavers (%) Not Achieving at least 5 GCSEs including English & maths, A*-C, NI SOAs, 2014/15 to 2015/-16



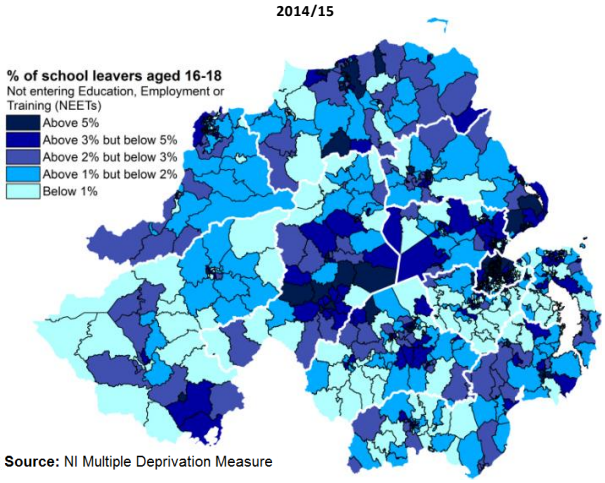
Source: NI Multiple Deprivation Measure

School leavers (%) Not Achieving at least 5 GCSEs including English & maths, A*-C, BCC SOAs, 2014/15 to 2015/-16



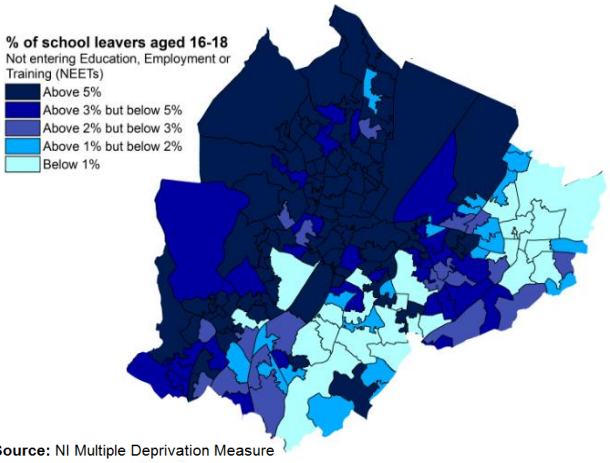
Source: NI Multiple Deprivation Measure

School leavers (%) Not entering Education, Employment or Training (NEETs), NI SOAs, 2013/14 to 2014/15



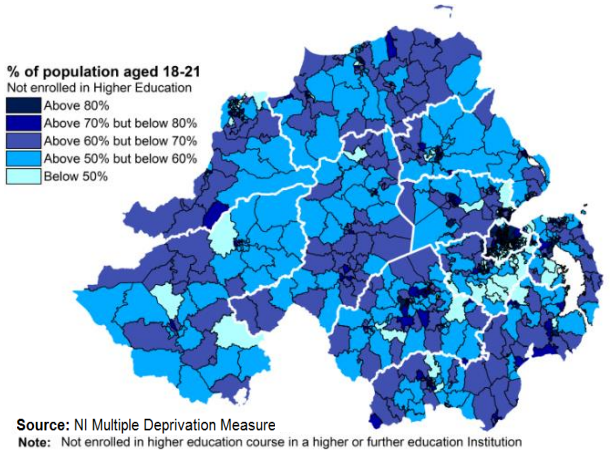
Source: NI Multiple Deprivation Measure

School leavers (%) Not entering Education, Employment or Training (NEETs), BCC SOAs, 2013/14 to 2014/15



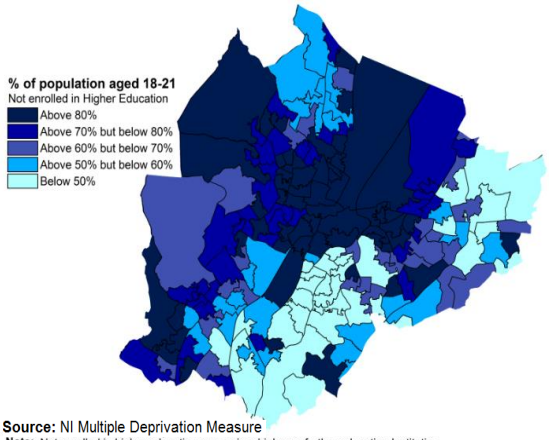
Source: NI Multiple Deprivation Measure

Population aged 18-21 (%) Not enrolled in Higher Education, NI SOAs, 2012/13 to 2015/16



Source: NI Multiple Deprivation Measure
Note: Not enrolled in higher education course in a higher or further education Institution

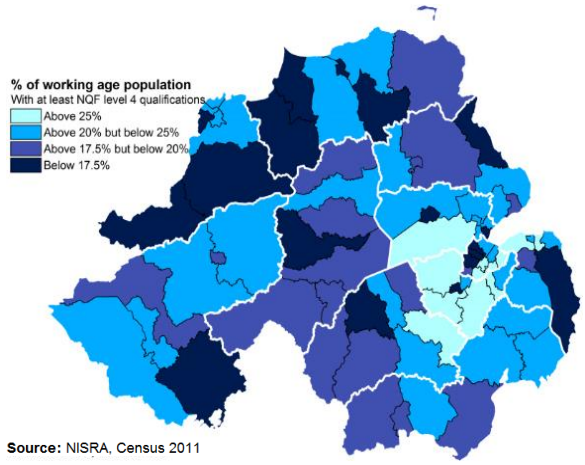
Population aged 18-21 (%) Not enrolled in Higher Education, BCC SOAs, 2012/13 to 2015/16



Source: NI Multiple Deprivation Measure
Note: Not enrolled in higher education course in a higher or further education Institution

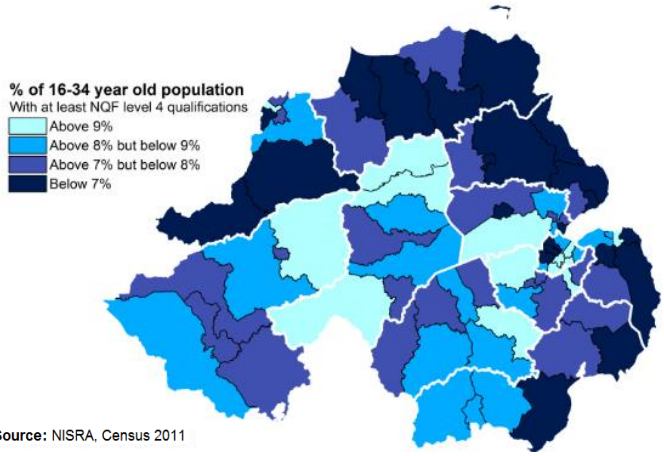
Annex D3: Population with high level skills

Working age population (%) with at least NQF level 4 qualifications, NI DEAs, 2011



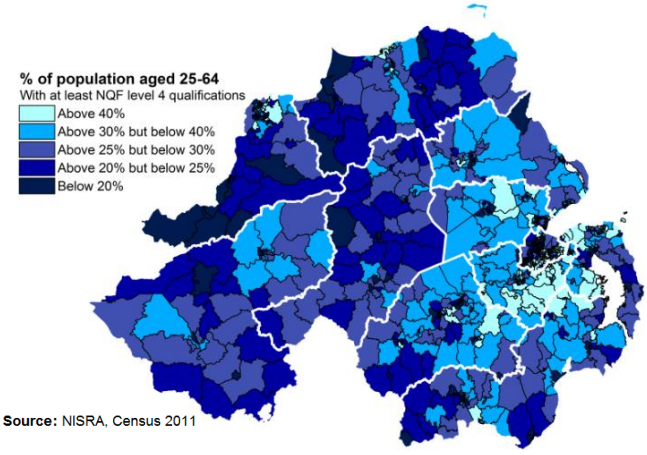
Source: NISRA, Census 2011

Population aged 16-34 (%) with at least NQF level 4 qualifications, NI DEAs, 2011



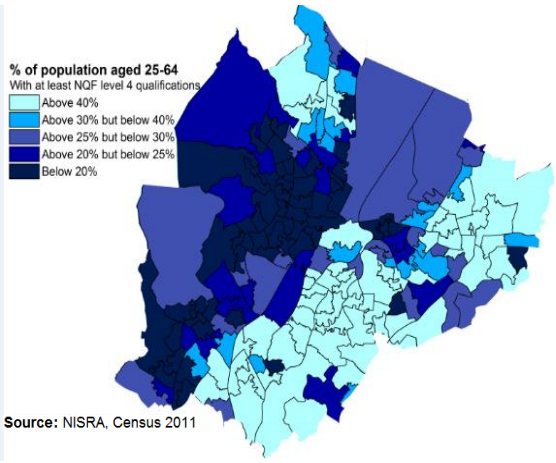
Source: NISRA, Census 2011

Resident population aged 25-64 (%) with at least NQF level 4 qualifications, NI SOAs, 2011



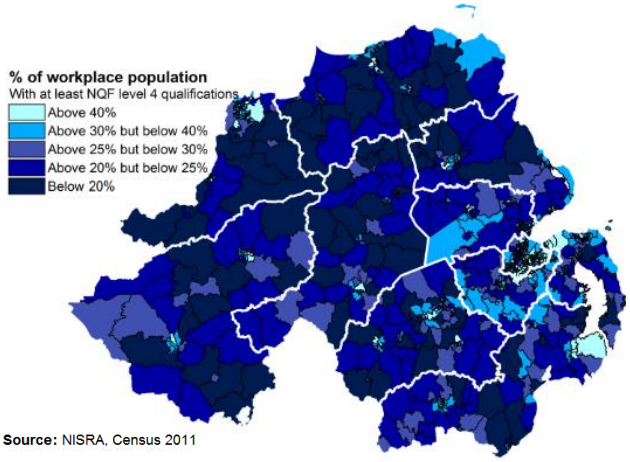
Source: NISRA, Census 2011

Resident population aged 25-64 (%) with at least NQF level 4 qualifications, BCC SOAs, 2011



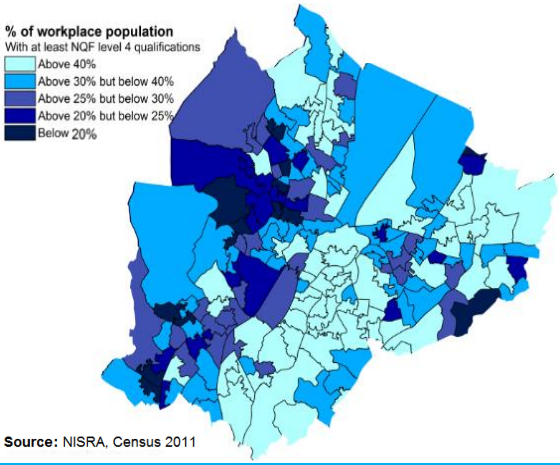
Source: NISRA, Census 2011

Workplace population aged 16-74 (%) with at least NQF level 4 qualifications, NI SOAs, 2011



Source: NISRA, Census 2011

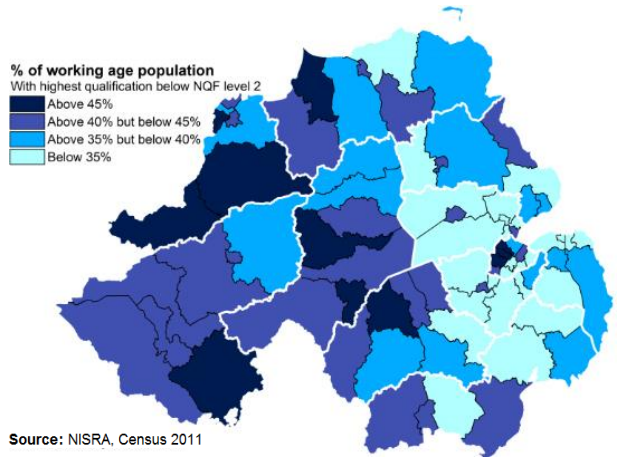
Workplace population aged 16-74 (%) with at least NQF level 4 qualifications, BCC SOAs, 2011



Source: NISRA, Census 2011

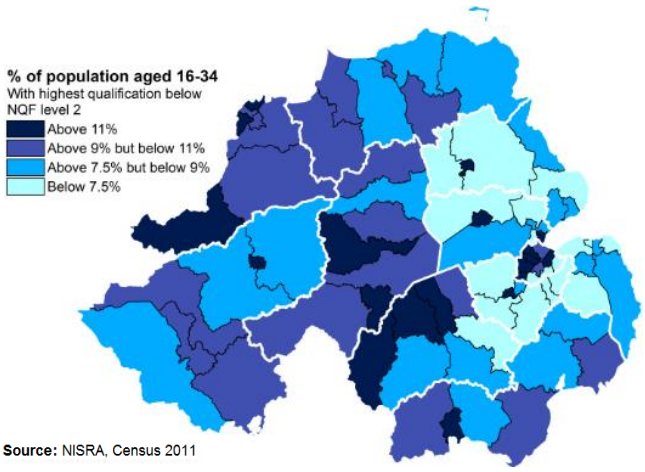
Annex D4: Population with low level skills

Working age population (%) with highest qualification below NQF level 2, NI DEAs, 2011



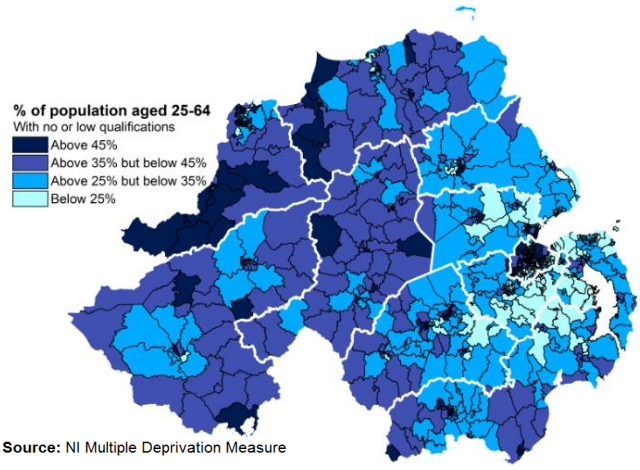
Source: NISRA, Census 2011

Population aged 16-34 (%) with highest qualification below NQF level 2, NI DEAs, 2011



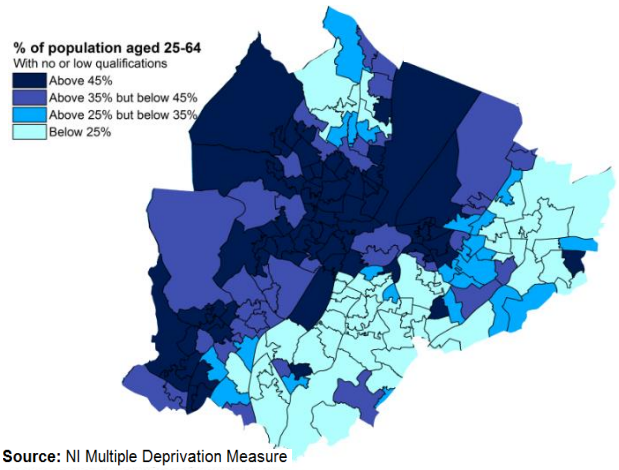
Source: NISRA, Census 2011

Resident population aged 25-64 (%) with highest qualification below NQF level 2, NI SOAs, 2011



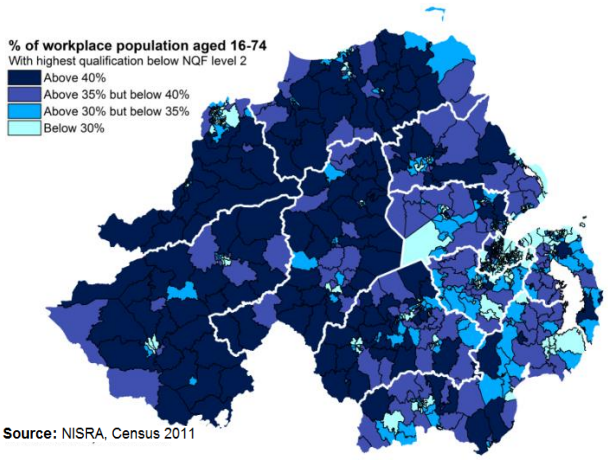
Source: NI Multiple Deprivation Measure

Resident population aged 25-64 (%) with low or no qualifications, BCC SOAs, 2011



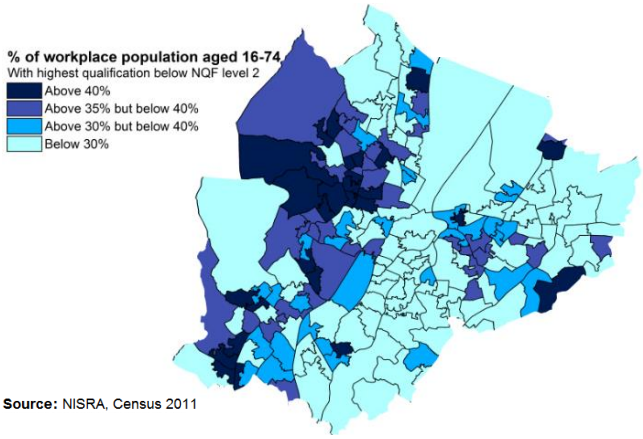
Source: NI Multiple Deprivation Measure

Workplace population aged 16-74 (%) with highest qualification below NQF level 2, NI SOAs, 2011



Source: NISRA, Census 2011

Workplace population aged 16-74 (%) with highest qualification below NQF level 2, BCC SOAs, 2011



Source: NISRA, Census 2011

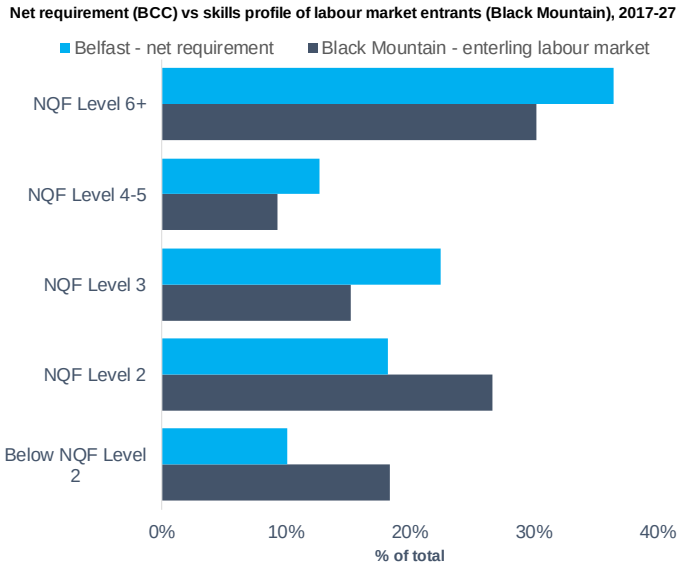
Annex E: District Electoral Areas and electoral wards in BCC

1. The table below summarises the electoral wards which comprise District Electoral Areas in Belfast City Council.

Table E1: District electoral areas and electoral wards

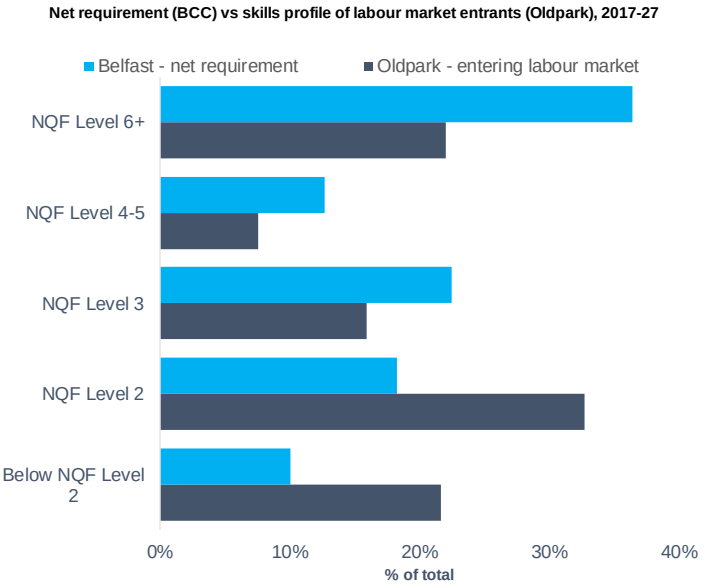
District Electoral Area	Electoral wards
Balmoral	Belvoir, Finaghy, Malone, Musgrave and Upper Malone
Black Mountain	Andersonstown, Ballymurphy, Beechmount, Colin Glen, Falls Park, Shaw's Road and Turf Lodge
Botanic	Blackstaff, Central, Ormeau, Stranmillis and Windsor
Castle	Bellevue, Cavehill, Chichester Park, Duncairn, Fortwilliam and Innisfayle
Collin	Dunmurry, Ladybrook, Lagmore, Poleglass, Stewartstown and Twinbrook
Court	Ballygomartin, Clonard, Falls, Forth River, Shankill and Woodvale
Lisnasharragh	Cregagh, Hillfoot, Merok, Orangefield, Ravenhill and Rosetta
Oldpark	Ardoyne, Ballysillan, Cliftonville, Legoniel, New Lodge, and Water Works
Ormiston	Belmont, Garnerville, Gilnahirk, Knock, Sandown, Shandon and Stormont
Titanic	Ballymacarrett, Beersbridge, Bloomfield, Connswater, Sydenham and Woodstock

Annex F: District Electoral Area scorecards



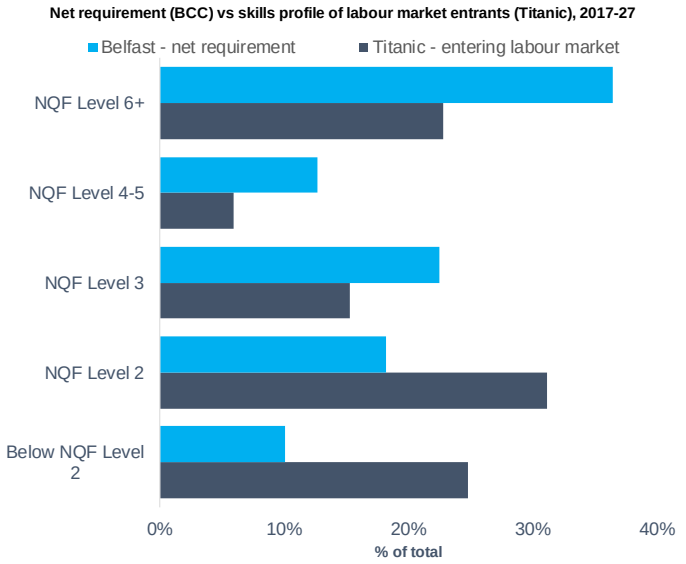
Source: UUEPC

	Black Mountain	%	Rank
Skills flow	% of school leavers achieving 5 GCSE's (including English and maths)	55%	76
	% of school enrolments entitled to FSM	57%	77
	% of school leavers entitled to FSM achieving 5 GCSE's (including English and maths)	21%	75
	% of FE qualifiers achieving a highest level of qualification at NQF level 2 and below	63%	66
	% of FE qualifiers achieving a highest level of qualification at NQF level 2	22%	69
	Qualifiers from tertiary level education in either FE or HE as a % of the 20-24 year olds	9%	76
	% of HE qualifiers achieving a postgraduate qualification (NQF level 7-8)	14%	78
	% of HE qualifiers gaining qualifications in maths, computing, engineering & technology	9%	68
Skills stock	% of 16-64 population with low qualifications (below NQF level 2)	51%	76
	% of 16-64 population with high qualifications (NQF level 4+)	16%	78
	% of 16-34 population with low qualifications (below NQF level 2)	37%	75
	% of 16-34 population with high qualifications (NQF level 4+)	18%	76
Labour market and socio-economic indicators	Social security clients (client group analysis) as a % of the population (16-64)	39%	77
	Social security clients (client group analysis) as a % of the population (16-34)	23%	73
	Housing benefit claimants as a % of the population (16-64)	20%	75
	Housing benefit claimants as a % of the population (16-34)	12%	64
	% of households with no adults in employment	47%	77
	% of households with no adults in employment with dependent children	11%	75
	% of households with lone parents with dependent children	17%	77
	% of people employed who are either managers/senior officials or professionals	5%	80
	Employment rate (%, 16-74 population)	48%	77
	Unemployed who have never worked (% of unemployed)	27%	79

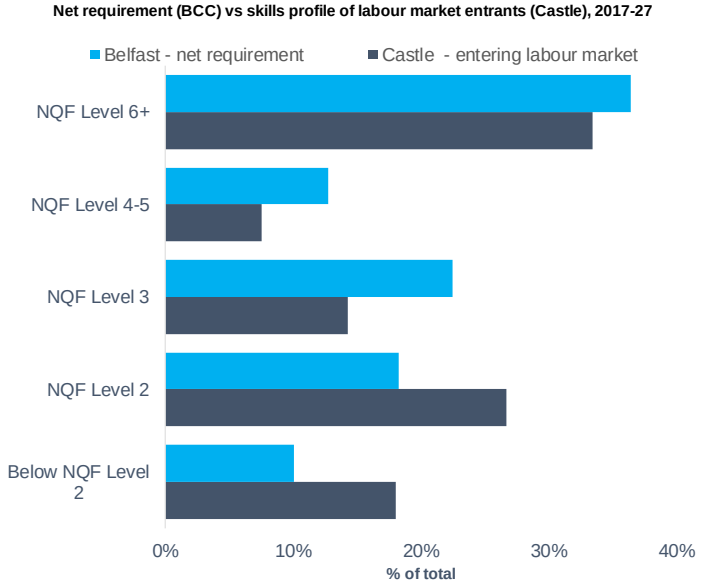


Source: UUEPC

	Oldpark	%	Rank
Skills flow	% of school leavers achieving 5 GCSE's (including English and maths)	48%	79
	% of school enrolments entitled to FSM	63%	79
	% of school leavers entitled to FSM achieving 5 GCSE's (including English and maths)	21%	74
	% of FE qualifiers achieving a highest level of qualification at NQF level 2 and below	66%	74
	% of FE qualifiers achieving a highest level of qualification at NQF level 2	22%	68
	Qualifiers from tertiary level education in either FE or HE as a % of the 20-24 year olds	8%	77
	% of HE qualifiers achieving a postgraduate qualification (NQF level 7-8)	18%	66
	% of HE qualifiers gaining qualifications in maths, computing, engineering & technology	10%	65
Skills stock	% of 16-64 population with low qualifications (below NQF level 2)	54%	79
	% of 16-64 population with high qualifications (NQF level 4+)	14%	79
	% of 16-34 population with low qualifications (below NQF level 2)	41%	78
	% of 16-34 population with high qualifications (NQF level 4+)	16%	79
Labour market and socio-economic indicators	Social security clients (client group analysis) as a % of the population (16-64)	44%	79
	Social security clients (client group analysis) as a % of the population (16-34)	37%	80
	Housing benefit claimants as a % of the population (16-64)	30%	79
	Housing benefit claimants as a % of the population (16-34)	25%	80
	% of households with no adults in employment	51%	78
	% of households with no adults in employment with dependent children	13%	77
	% of households with lone parents with dependent children	18%	78
	% of people employed who are either managers/senior officials or professionals	5%	79
	Employment rate (%, 16-74 population)	47%	78
	Unemployed who have never worked (% of unemployed)	25%	76



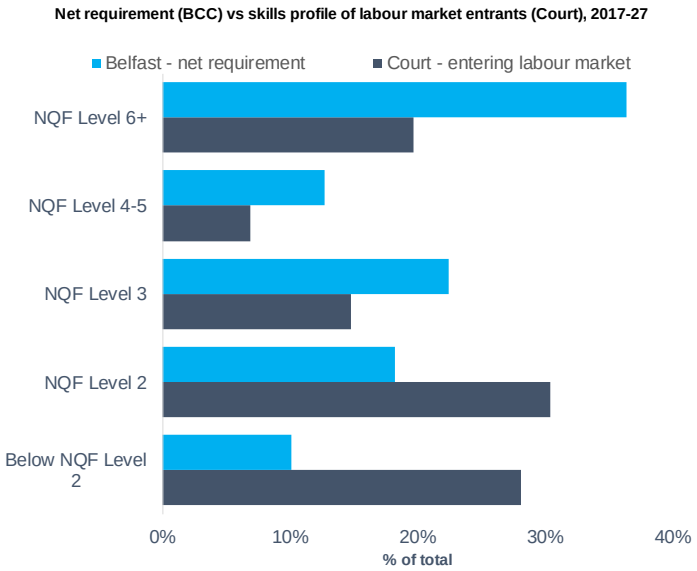
Source: UUEPC



Source: UUEPC

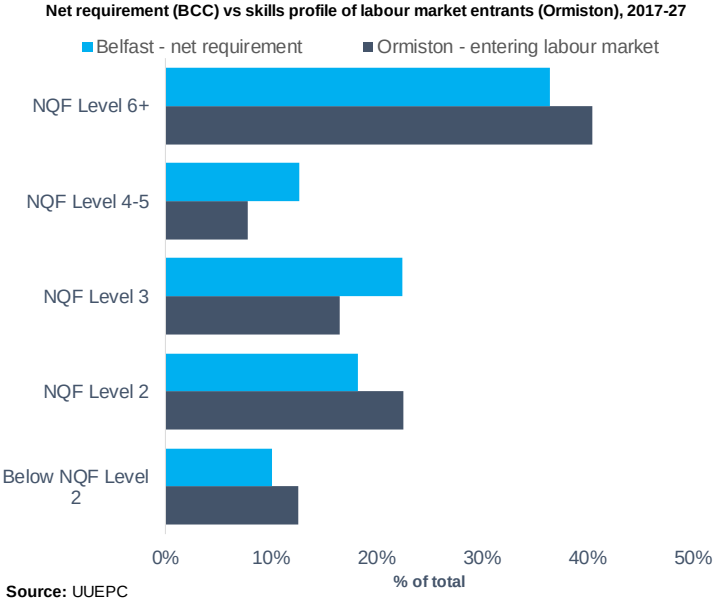
	TITANIC	%	Rank
Skills flow	% of school leavers achieving 5 GCSE's (including English and Maths)	54%	77
	% of school enrolments entitled to FSM	52%	76
	% of school leavers entitled to FSM achieving 5 GCSE's (including English and Maths)	17%	68
	% of FE qualifiers achieving a highest level of qualification at NQF level 2 and below	68%	78
	% of FE qualifiers achieving a highest level of qualification at NQF level 2	27%	76
	Qualifiers from tertiary level education in either FE or HE as a % of the 20-24 year olds	7%	78
	% of HE qualifiers achieving a postgraduate qualification (L7-8)	32%	7
	% of HE qualifiers gaining qualifications in maths, computing, engineering & technology	14%	18
Skills stock	% of 16-64 population with low qualifications (Below level 2)	44%	67
	% of 16-64 population with high qualifications (Level 4+)	27%	25
	% of 16-34 population with low qualifications (Below level 2)	34%	64
	% of 16-34 population with high qualifications (Level 4+)	32%	7
Labour market and socio-economic indicators	Social security clients (client group analysis) as a % of the population (16-64)	29%	71
	Social security clients (client group analysis) as a % of the population (16-34)	23%	74
	Housing benefit claimants as a % of the population (16-64)	20%	76
	Housing benefit claimants as a % of the population (16-34)	17%	76
	% of households with no adults in employment	40%	67
	% of households with no adults in employment with dependent children	7%	65
	% of households with lone parents with dependent children	12%	72
	% of people employed who are either managers/senior officials or professionals	6%	75
	Employment rate (%, 16-74 population)	60%	55
	Unemployed who have never worked (% of unemployed)	20%	69

	Castle	%	Rank
Skills flow	% of school leavers achieving 5 GCSE's (including English and maths)	66%	51
	% of school enrolments entitled to FSM	36%	64
	% of school leavers entitled to FSM achieving 5 GCSE's (including English and maths)	17%	67
	% of FE qualifiers achieving a highest level of qualification at NQF level 2 and below	66%	75
	% of FE qualifiers achieving a highest level of qualification at NQF level 2	24%	73
	Qualifiers from tertiary level education in either FE or HE as a % of the 20-24 year olds	14%	57
	% of HE qualifiers achieving a postgraduate qualification (NQF level 7-8)	27%	23
	% of HE qualifiers gaining qualifications in maths, computing, engineering & technology	10%	61
Skills stock	% of 16-64 population with low qualifications (below NQF level 2)	38%	32
	% of 16-64 population with high qualifications (NQF level 4+)	29%	16
	% of 16-34 population with low qualifications (below NQF level 2)	31%	54
	% of 16-34 population with high qualifications (NQF level 4+)	27%	20
Labour market and socio-economic indicators	Social security clients (client group analysis) as a % of the population (16-64)	28%	67
	Social security clients (client group analysis) as a % of the population (16-34)	20%	63
	Housing benefit claimants as a % of the population (16-64)	17%	72
	Housing benefit claimants as a % of the population (16-34)	13%	69
	% of households with no adults in employment	40%	69
	% of households with no adults in employment with dependent children	6%	58
	% of households with lone parents with dependent children	11%	68
	% of people employed who are either managers/senior officials or professionals	8%	48
	Employment rate (%, 16-74 population)	59%	59
	Unemployed who have never worked (% of unemployed)	18%	64



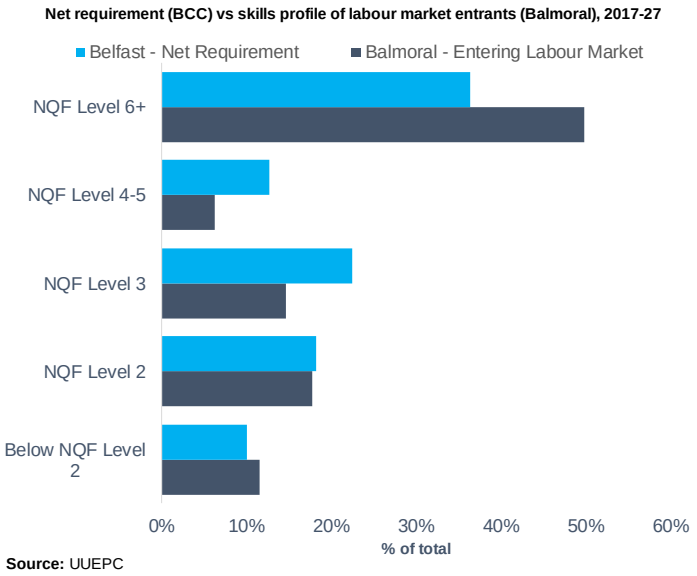
Source: UUEPC

	Court	%	Rank
Skills flow	% of school leavers achieving 5 GCSE's (including English and maths)	46%	80
	% of school enrolments entitled to FSM	64%	80
	% of school leavers entitled to FSM achieving 5 GCSE's (including English and maths)	22%	76
	% of FE qualifiers achieving a highest level of qualification at NQF level 2 and below	72%	80
	% of FE qualifiers achieving a highest level of qualification at NQF level 2	30%	78
	Qualifiers from tertiary level education in either FE or HE as a % of the 20-24 year olds	6%	79
	% of HE qualifiers achieving a postgraduate qualification (NQF level 7-8)	18%	69
	% of HE qualifiers gaining qualifications in maths, computing, engineering & technology	3%	80
Skills stock	% of 16-64 population with low qualifications (below NQF level 2)	58%	80
	% of 16-64 population with high qualifications (NQF level 4+)	12%	80
	% of 16-34 population with low qualifications (below NQF level 2)	46%	80
	% of 16-34 population with high qualifications (NQF level 4+)	14%	80
Labour market and socio-economic indicators	Social security clients (client group analysis) as a % of the population (16-64)	44%	78
	Social security clients (client group analysis) as a % of the population (16-34)	35%	79
	Housing benefit claimants as a % of the population (16-64)	29%	78
	Housing benefit claimants as a % of the population (16-34)	24%	79
	% of households with no adults in employment	53%	79
	% of households with no adults in employment with dependent children	12%	76
	% of households with lone parents with dependent children	17%	76
	% of people employed who are either managers/senior officials or professionals	5%	78
	Employment rate (%, 16-74 population)	46%	79
	Unemployed who have never worked (% of unemployed)	25%	77

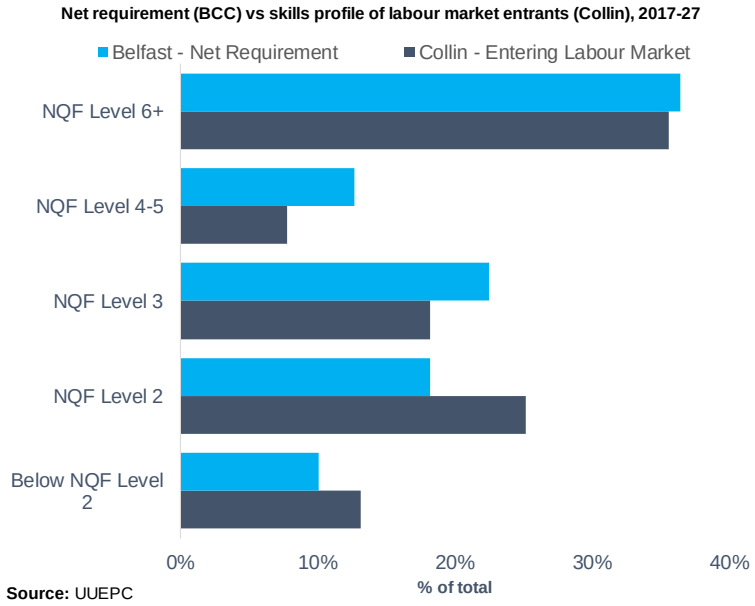


Source: UUEPC

	Ormiston	%	Rank
Skills flow	% of school leavers achieving 5 GCSE's (including English and maths)	75%	17
	% of school enrolments entitled to FSM	16%	13
	% of school leavers entitled to FSM achieving 5 GCSE's (including English and maths)	3%	1
	% of FE qualifiers achieving a highest level of qualification at NQF level 2 and below	59%	54
	% of FE qualifiers achieving a highest level of qualification at NQF level 2	18%	59
	Qualifiers from tertiary level education in either FE or HE as a % of the 20-24 year olds	20%	13
	% of HE qualifiers achieving a postgraduate qualification (NQF level 7-8)	33%	6
	% of HE qualifiers gaining qualifications in maths, computing, engineering & technology	11%	57
Skills stock	% of 16-64 population with low qualifications (below NQF level 2)	29%	7
	% of 16-64 population with high qualifications (NQF level 4+)	39%	5
	% of 16-34 population with low qualifications (below NQF level 2)	24%	14
	% of 16-34 population with high qualifications (NQF level 4+)	34%	6
Labour market and socio-economic indicators	Social security clients (client group analysis) as a % of the population (16-64)	15%	11
	Social security clients (client group analysis) as a % of the population (16-34)	11%	18
	Housing benefit claimants as a % of the population (16-64)	7%	24
	Housing benefit claimants as a % of the population (16-34)	5%	25
	% of households with no adults in employment	35%	48
	% of households with no adults in employment with dependent children	3%	11
	% of households with lone parents with dependent children	6%	19
	% of people employed who are either managers/senior officials or professionals	10%	7
	Employment rate (%, 16-74 population)	66%	15
	Unemployed who have never worked (% of unemployed)	12%	20



Source: UUEPC

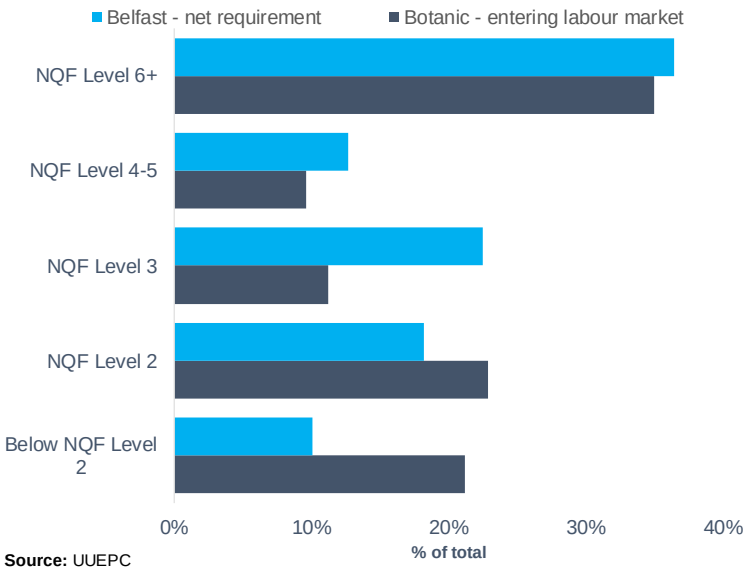


Source: UUEPC

	Balmoral	%	Rank
Skills flow	% of school leavers achieving 5 GCSE's (including English and maths)	83%	5
	% of school enrolments entitled to FSM	16%	12
	% of school leavers entitled to FSM achieving 5 GCSE's (including English and maths)	6%	13
	% of FE qualifiers achieving a highest level of qualification at NQF level 2 and below	58%	53
	% of FE qualifiers achieving a highest level of qualification at NQF level 2	21%	66
	Qualifiers from tertiary level education in either FE or HE as a % of the 20-24 year olds	22%	6
	% of HE qualifiers achieving a postgraduate qualification (NQF level 7-8)	41%	2
	% of HE qualifiers gaining qualifications in maths, computing, engineering & technology	13%	31
Skills stock	% of 16-64 population with low qualifications (below NQF level 2)	26%	3
	% of 16-64 population with high qualifications (NQF level 4+)	44%	2
	% of 16-34 population with low qualifications (below NQF level 2)	21%	5
	% of 16-34 population with high qualifications (NQF level 4+)	39%	2
Labour market and socio-economic indicators	Social security clients (client group analysis) as a % of the population (16-64)	17%	17
	Social security clients (client group analysis) as a % of the population (16-34)	10%	13
	Housing benefit claimants as a % of the population (16-64)	7%	31
	Housing benefit claimants as a % of the population (16-34)	5%	21
	% of households with no adults in employment	35%	46
	% of households with no adults in employment with dependent children	3%	12
	% of households with lone parents with dependent children	6%	25
	% of people employed who are either managers/senior officials or professionals	10%	9
	Employment rate (%, 16-74 population)	64%	28
	Unemployed who have never worked (% of unemployed)	13%	30

	Collin	%	Rank
Skills flow	% of school leavers achieving 5 GCSE's (including English and maths)	61%	70
	% of school enrolments entitled to FSM	47%	74
	% of school leavers entitled to FSM achieving 5 GCSE's (including English and maths)	19%	70
	% of FE qualifiers achieving a highest level of qualification at NQF level 2 and below	55%	35
	% of FE qualifiers achieving a highest level of qualification at NQF level 2	14%	44
	Qualifiers from tertiary level education in either FE or HE as a % of the 20-24 year olds	13%	62
	% of HE qualifiers achieving a postgraduate qualification (NQF level 7-8)	24%	39
	% of HE qualifiers gaining qualifications in maths, computing, engineering & technology	9%	71
Skills stock	% of 16-64 population with low qualifications (below NQF level 2)	43%	59
	% of 16-64 population with high qualifications (NQF level 4+)	21%	69
	% of 16-34 population with low qualifications (below NQF level 2)	33%	61
	% of 16-34 population with high qualifications (NQF level 4+)	21%	69
Labour market and socio-economic indicators	Social security clients (client group analysis) as a % of the population (16-64)	33%	75
	Social security clients (client group analysis) as a % of the population (16-34)	25%	75
	Housing benefit claimants as a % of the population (16-64)	17%	73
	Housing benefit claimants as a % of the population (16-34)	14%	71
	% of households with no adults in employment	39%	63
	% of households with no adults in employment with dependent children	14%	78
	% of households with lone parents with dependent children	21%	80
	% of people employed who are either managers/senior officials or professionals	6%	73
	Employment rate (%, 16-74 population)	54%	71
	Unemployed who have never worked (% of unemployed)	23%	75

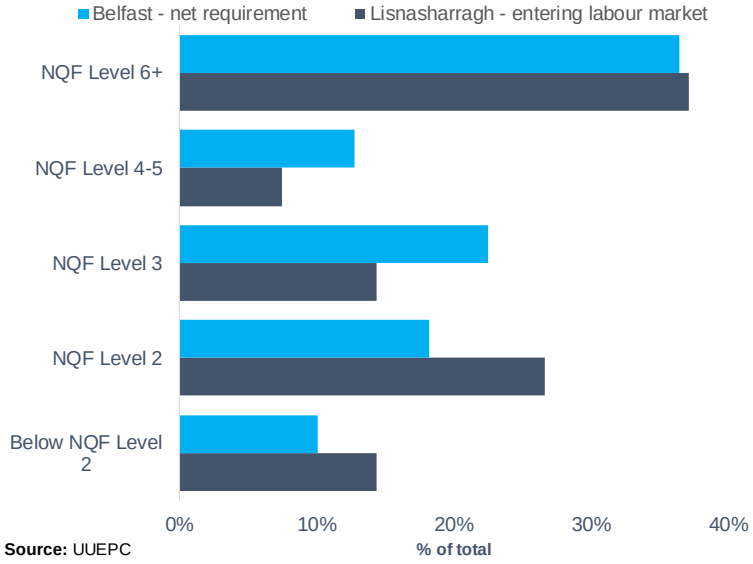
Net requirement (BCC) vs skills profile of labour market entrants (Botanic), 2017-27



Source: UUEPC

	Botanic	%	Rank
Skills flow	% of school leavers achieving 5 GCSE's (including English and maths)	66%	52
	% of school enrolments entitled to FSM	42%	72
	% of school leavers entitled to FSM achieving 5 GCSE's (including English and maths)	16%	61
	% of FE qualifiers achieving a highest level of qualification at NQF level 2 and below	66%	73
	% of FE qualifiers achieving a highest level of qualification at NQF level 2	30%	80
	Qualifiers from tertiary level education in either FE or HE as a % of the 20-24 year olds	4%	80
	% of HE qualifiers achieving a postgraduate qualification (NQF level 7-8)	54%	1
	% of HE qualifiers gaining qualifications in maths, computing, engineering & technology	11%	53
Skills stock	% of 16-64 population with low qualifications (below NQF level 2)	23%	2
	% of 16-64 population with high qualifications (NQF level 4+)	38%	7
	% of 16-34 population with low qualifications (below NQF level 2)	15%	1
	% of 16-34 population with high qualifications (NQF level 4+)	36%	4
Labour market and socio-economic indicators	Social security clients (client group analysis) as a % of the population (16-64)	16%	16
	Social security clients (client group analysis) as a % of the population (16-34)	8%	7
	Housing benefit claimants as a % of the population (16-64)	12%	56
	Housing benefit claimants as a % of the population (16-34)	6%	32
	% of households with no adults in employment	32%	24
	% of households with no adults in employment with dependent children	4%	28
	% of households with lone parents with dependent children	6%	22
	% of people employed who are either managers/senior officials or professionals	6%	76
	Employment rate (%, 16-74 population)	61%	48
	Unemployed who have never worked (% of unemployed)	18%	65

Net requirement (BCC) vs skills profile of labour market entrants (Lisnasharragh), 2017-27



Source: UUEPC

	Lisnasharragh	%	Rank
Skills flow	% of school leavers achieving 5 GCSE's (including English and maths)	77%	11
	% of school enrolments entitled to FSM	19%	20
	% of school leavers entitled to FSM achieving 5 GCSE's (including English and maths)	8%	26
	% of FE qualifiers achieving a highest level of qualification at NQF level 2 and below	64%	67
	% of FE qualifiers achieving a highest level of qualification at NQF level 2	20%	64
	Qualifiers from tertiary level education in either FE or HE as a % of the 20-24 year olds	20%	15
	% of HE qualifiers achieving a postgraduate qualification (NQF level 7-8)	38%	3
	% of HE qualifiers gaining qualifications in maths, computing, engineering & technology	10%	64
Skills stock	% of 16-64 population with low qualifications (below NQF level 2)	27%	5
	% of 16-64 population with high qualifications (NQF level 4+)	43%	3
	% of 16-34 population with low qualifications (below NQF level 2)	20%	3
	% of 16-34 population with high qualifications (NQF level 4+)	44%	1
Labour market and socio-economic indicators	Social security clients (client group analysis) as a % of the population (16-64)	15%	10
	Social security clients (client group analysis) as a % of the population (16-34)	12%	26
	Housing benefit claimants as a % of the population (16-64)	6%	21
	Housing benefit claimants as a % of the population (16-34)	5%	24
	% of households with no adults in employment	32%	28
	% of households with no adults in employment with dependent children	3%	8
	% of households with lone parents with dependent children	6%	11
	% of people employed who are either managers/senior officials or professionals	8%	40
	Employment rate (%, 16-74 population)	69%	5
	Unemployed who have never worked (% of unemployed)	14%	38